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The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1984 Season



APRIL 1985

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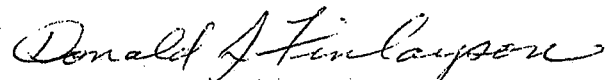
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FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in northern California during the 1984 irrigation season. Authority for its preparation and publication is stated in the California Water Code, Division 2, Part 4, Chapter 7.

Information about the service is presented in two parts. The first gives general information about water rights, water supply service areas and watermaster duties; the second describes the sixteen active service areas, twelve in the Department's Northern District and two in the Central District. Each of these fourteen sections gives information on the general area, the basis of watermaster service, water supply, method of distribution, 1984 distribution, and other information.

Effective with the 1985 season report, to be issued in 1986, the watermaster report will be in two separate parts. The main report will contain information on service areas, sources of water, diversions, and decreed water rights. This report will be updated every five years. Information on seasonal water supplies, distribution, and personnel used in each of the service areas will be issued in an annual "Summary of Operations".



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INTRODUCTION

Purpose and Benefits

The main purpose of watermaster service is to distribute water according to established water rights. This is done by apportioning to the rightful users the available supplies, in streams that have had water right determinations.

Distribution of water in watermaster service areas is the lawful duty of the Department of Water Resources as directed in Part 4 of Division 2 of the California Water Code. Under watermaster service water right owners are assured that their rights are protected, without their having to take legal action against other users.

A major benefit of watermaster service to water users and the State is that court litigation and violent conflict, which in the past happened often, are now rare. Also, available supplies of water are better used, as waste is reduced through careful management.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. Effective January 1, 1985, the State general tax fund pays one-half of the cost of operating each service area and the water right owners in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code. This work is not done cheaply. It takes considerable public money to maintain skilled representatives in the field full-time during the dry months of the growing season, and at the same time have the necessary administrative and office support at the Department headquarters. Nevertheless, most clients find the benefits of fair, reliable, and comparatively worry-free distribution of water to be far superior to doing without the State watermaster service.

Determination of Water Rights

Many of the streams under State watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These judgments establish each owner's rights in term of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked according to the rights of all other decreed owners. Under this system, all rights of any one priority must be fully satisfied before water can be diverted to holders of lower priority rights. The determinations of the courts are commonly called decrees.

Water rights decisions necessary for establishing watermaster service areas may be accomplished by "statutory adjudication", "court adjudication", or "court reference". There are also ways to establish rights that do not involve the courts except, usually, to grant their official "stamp of approval."

Non-Judicial Decisions

A permit or "license to appropriate" can be issued by the State Water Resources Control Board (SWRCB), or agreement can be reached by mutual consent of the water users involved.

Court Adjudication

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of the parties involved in the action and therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right owners and persons claiming longer-standing riparian or appropriative rights that were not specified in the decree.

Court Reference

The "court reference" type of adjudication arises when a civil action, as discussed, is referred to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. The Board's report becomes the basis for the court's decision. As in court adjudications, a court referee determines only the water rights of the parties involved in the action.

Statutory Adjudications

The California Water Code (Sections 2500-2900) gives a procedure whereby water users of any stream may petition the SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If the Board finds that such a determination is in the best public interest, it proceeds with a legally binding decision. This results in a court decree that defines all water rights on the stream.

The number of decreed owners and amounts of water rights for each service area are shown on page 11. Table 1 lists Superior Court decrees and their types.

TABLE 1
SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System	County	Decree			Date Watermaster Service Area Created	Remarks	
			Number	Date	Type*			
Ash Creek	Ash Creek	Modoc ** and Lassen	3670	10-27-47	CR	4-03-59	Included as part of Big Valley service area 1949 through 1958.	
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959. Service discontinued on December 31, 1981.	
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	Service provided in accordance with decree since 1926.	
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43		
Cow Creek	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32		
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32		
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38		
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64		
			3214	5-27-13	C			
			3327	10-16-17	C			
			4570	2-24-27	C			
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.	
			7858	10-07-35	CR			
Indian Creek	Indian Creek	Plumas	4185	5-19-50	S	2-19-51		
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-22-40	S	3-29-40		
North Fork Cottonwood Cr.	North Fork Cottonwood Cr.	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in accordance with the decree since 1924.	
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into North Fork Pit River service area 12-13-40.	
		New Pine Creek	Modoc	2821	6-14-32	CR		6-22-32
		Davis Creek	Modoc	2782	6-30-32	CR		7-13-32
		Franklin Creek	Modoc	3118	9-08-33	CR		9-14-33
		Cottonwood Creek	Modoc	2344	5-03-40	CR		12-13-40
		Pine Creek	Modoc	Agreement	11-22-33			1-12-35
Scott River	French Creek	Siskiyou	14478	7-01-58	CR	11-19-68	French, Shackleford, and Wildcat Creek were combined in 1980 to form the Scott River service area. Sniktaw Creek was added on April 1, 1981.	
	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50		
	Wildcat Creek	Siskiyou	30662	1-16-80	S	5-01-80		
	Sniktaw Creek	Siskiyou	30662	1-16-80	S	4-01-81		
Seiad Creek	Seiad Creek	Siskiyou	13774	4-10-50	S	11-06-50	No service provided in 1984.	
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33		
	Willow Creek	Siskiyou	24482	6-22-72	C	7-01-72		
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81		
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	9-11-29	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court.	
			2343	2-15-23	C			
	Soldier Creek	Modoc	2405	11-28-28	CR	9-11-29		
	Owl Creek	Modoc	2410	4-29-29	CR	9-11-29		
	Emerson Creek	Modoc	2840	3-25-30	CR	4-02-03		
	Mill Creek	Modoc	3024	12-19-31	CR	12-30-31		
	Deer Creek	Modoc	3101	1-25-34	CR	12-29-34		
	Pine Creek	Modoc	3391	12-07-36	CR	1-13-37		
	Rader Creek	Modoc	3626	6-04-37	CR	6-12-37		
	Eagle Creek	Modoc	2304	4-05-26	C	1-10-39		
			3284	11-05-37	CR			
		Bidwell Creek	Modoc	6420	1-13-60	S		3-16-60
	Susan River	Susan River	Lassen	4573	4-18-40	CR		11-10-41
Baxter Creek		Lassen	8174	12-15-55	S	2-16-56		
Parker Creek		Lassen	8175	12-15-55	S	2-16-56		

* Explanation of type of decree:

C - Court adjudication (court makes determination from evidence submitted--no report of referee)

CR - Court reference (referred to State Water Resources Control Board for investigation and report)

S - Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county

Watermaster Service Areas

Formation

Watermaster service is provided in areas where the rights have been defined by the superior court of the county, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of the Department of Water Resources creates watermaster service areas where these conditions exist, following either a request by the users or an order by the superior court.

The first watermaster service areas were created in September 1929. Before then, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California that are under State watermaster service. The newest service areas were created in 1979.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these sixteen areas, fourteen are in the Department's Northern District and two are in the Central District.

Description of Region

The service areas are mainly in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although much land is used exclusively for pasturing livestock. Most irrigation is done by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas. A map of this region showing the fourteen service areas is presented on page 11.

TABLE 2
WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources	
		MAJOR STREAM and tributaries <u>a/</u>	Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK	
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	West Branch Feather River
Cow Creek	Shasta	COW CREEK <u>b/</u> North Cow, Clover, Oak Run Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	MIDDLE FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels; Westside Canal	Little Truckee River
North Fork Cottonwood Creek	Shasta	NORTH FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	NORTH FORK PIT RIVER Parker Creek	Pine, Cottonwood, Davis, and New Pine Creeks
Scott River	Siskiyou	FRENCH CREEK Shackleford, Mill, Miners, Wildcat, Oro Fino, Sniktaw Creeks	Cliff and Campbell Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River	Dwinnell Reservoir (Lake Shastina), Cold Creek, Willow Creek
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Cottonwood, Owl, Rader, Eagle, Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

a/ Major tributaries only; a complete listing is given in "Index to Water Sources", page vi.

b/ Mainstem Cow Creek not in service area.

Watermaster Responsibilities

Authority

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority according to established water rights.

To accomplish this, the watermaster gets his authority both from Water Code and from provisions of pertinent court decrees or voluntary agreements to physically regulate the streams in the service area. He is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at around 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversions points increases substantially in years of short water supply.

Control Devices

Permanent measurement and control devices which the State requires (Water Code Sections 4100-4104) at each owner's main point of diversion are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users usually stop. Also, the watermaster's ability to check and set each diversion regularly is greatly helped by good structures.

Interpretation of Decrees

The watermaster is often called upon to make on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, he must possess a good understanding of California water rights law.

Water Supply

Sources

Water supply in the watermaster service areas comes mainly from unregulated runoff of small streams. Peak runoff--snowmelt in most cases--occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow, but State watermasters do not supervise the use of ground water in this part of the State.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin 120 series, "Water Conditions in California", is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1983-84 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and provides a basis for comparing the current year's supply with a long-term average.

Data collected at representative snow courses showing the snowpack as of April 1, 1984, on all courses and the snowpack on May 1 at selected courses, are presented in Table 4. This information comes from the Department's basic data files.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the U. S. Geological Survey as part of a Federal-State program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1983-84 SEASON

Station	County	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total	Percent of Mean
Fort Jones R.S.	Sisk.	<u>.56</u> 1.39	<u>6.77</u> 2.94	<u>6.22</u> 4.49	<u>.26</u> 4.77	<u>2.63</u> 2.79	<u>1.75</u> 2.00	<u>1.58</u> 1.08	<u>.17</u> .76	<u>.10</u> .78	<u>.12</u> .34	<u>.49</u> .49	<u>.77</u> .65	<u>21.42</u> 22.48	95
Happy Camp R.S.	Sisk.	<u>1.30</u> 3.67	<u>15.52</u> 7.91	<u>15.48</u> 10.90	<u>1.03</u> 12.18	<u>9.15</u> 7.78	<u>6.02</u> 6.51	<u>3.58</u> 2.78	<u>1.85</u> 1.45	<u>.85</u> .61	<u>.00</u> .25	<u>.23</u> .54	<u>1.02</u> 1.09	<u>56.03</u> 55.67	101
Yreka	Sisk.	<u>.53</u> 1.25	<u>5.46</u> 2.34	<u>7.11</u> 3.83	<u>.20</u> 3.68	<u>2.05</u> 2.17	<u>1.63</u> 1.80	<u>1.29</u> .89	<u>.23</u> .77	<u>.11</u> .85	<u>.10E</u> .40	<u>.70</u> .63	<u>.24</u> .59	<u>19.65</u> 19.20	102
Redding Fire Station #4	Shasta	<u>1.70</u> 2.03	<u>9.59</u> 5.56	<u>15.56</u> 7.03	<u>.35</u> 8.51	<u>5.51E</u> 6.19	<u>4.45</u> 4.96	<u>2.45</u> 2.82	<u>.27</u> 1.28	<u>.95</u> .83	<u>.00</u> .18	<u>.00</u> .51	<u>.73</u> 1.05	<u>41.56</u> 40.95	101
Hat Creek P.H. #1	Shasta	<u>1.34</u> 1.23	<u>4.05</u> 2.09	<u>5.19</u> 3.22	<u>.13</u> 3.24	<u>2.26</u> 2.53	<u>1.27</u> 2.09	<u>1.75</u> 1.22	<u>.57</u> 1.22	<u>.78</u> .89	<u>.14</u> .21	<u>.95</u> .37	<u>.56</u> .56	<u>18.99</u> 18.87	101
Lookout 3WSW	Lassen	<u>1.20</u> 1.47	<u>6.10</u> 3.40	<u>5.54</u> 4.00	<u>.00</u> 3.70	<u>3.15</u> 2.58	<u>1.24</u> 2.30	<u>2.53</u> 1.53	<u>1.64</u> 1.11	<u>2.39</u> 1.17	<u>.16</u> .28	<u>.75</u> .54	<u>.44</u> .76	<u>25.14</u> 22.84	110
Alturas R.S.	Modoc	<u>1.06</u> .94	<u>3.03</u> 1.31	<u>4.17</u> 1.53	<u>.19</u> 1.67	<u>1.11</u> 1.23	<u>1.23</u> 1.25	<u>1.00</u> 1.00	<u>.68</u> 1.21	<u>1.71</u> 1.09	<u>.02</u> .31	<u>.85</u> .43	<u>.31</u> .48	<u>15.36</u> 12.45	123
Jess Valley	Modoc	<u>1.27</u> 1.38	<u>3.39</u> 1.89	<u>7.04</u> 1.96	<u>.57</u> 1.99	<u>1.56</u> 1.67	<u>2.05</u> 1.82	<u>1.41</u> 1.80	<u>1.52</u> 2.04	<u>2.77</u> 1.57	<u>.85</u> .48	<u>.92</u> .64	<u>.56</u> .73	<u>23.91</u> 17.97	133
Cedarville	Modoc	<u>.34</u> 1.18	<u>2.93</u> 1.61	<u>5.77</u> 2.70	<u>.15</u> 2.02	<u>1.07</u> 1.36	<u>1.50</u> 1.33	<u>1.54</u> 1.02	<u>.81</u> 1.11	<u>1.99</u> .83	<u>.21</u> .37	<u>.48</u> .38	<u>T</u> .48	<u>16.79</u> 14.39	117
Susanville Airport	Lassen	<u>1.15</u> 1.14	<u>5.37</u> 1.43	<u>4.01</u> 2.59	<u>.11</u> 2.88	<u>.76</u> 1.93	<u>.69</u> 1.38	<u>.38</u> .64	<u>.00</u> .75	<u>.19</u> .67	<u>.09</u> .30	<u>.16</u> .22	<u>.28</u> .36	<u>13.19</u> 14.29	92
Greenville R.S.	Plumas	<u>2.65</u> 2.31	<u>14.06</u> 4.64	<u>12.20</u> 6.64E	<u>.34</u> 8.47	<u>5.80</u> 6.25	<u>5.26</u> 4.95	<u>2.32</u> 2.72	<u>.34</u> 1.59	<u>.90</u> .85	<u>.23</u> .30	<u>.84</u> .46	<u>.75</u> .67	<u>45.69</u> 39.85	115
Sierraville R.S.	Sierra	<u>1.24</u> 1.97	<u>14.75</u> 2.99	<u>6.60</u> 4.73	<u>.89</u> 5.46	<u>3.58</u> 3.75	<u>2.27</u> 2.90	<u>1.44</u> 1.56	<u>.18</u> 1.35	<u>.52</u> .60	<u>1.21</u> .32	<u>.15</u> .42	<u>.14</u> .52	<u>32.97</u> 26.57	124
Vinton	Plumas	<u>1.49</u> .91	<u>6.34</u> 1.33	<u>3.66</u> 2.15	<u>.09</u> 2.39	<u>1.87</u> 1.54	<u>.68</u> 1.26	<u>.60</u> .78	<u>.13</u> .99	<u>.57</u> .64	<u>.46</u> .32	<u>.52</u> .38	<u>.21</u> .37	<u>16.62</u> 13.06	127

* Long-term average at Redding F.S. #2

E Estimate

NOTE: Figures above line are current season; Below line are long-term averages.

Data collected at representative snow courses showing the snowpack as of April 1, 1984, on all courses and the snowpack on May 1 at selected courses, are presented in Table 4. This information comes from the Department's basic data files.

TABLE 4
SNOWPACK AS OF APRIL 1 AND MAY 1, 1984, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course * Group Related to Each Service Area	Elevation (in feet)	WATER CONTENT OF SNOW				
			April 1 Average (in inches)	April 1, 1983**		May 1, 1983	
				In inches	In Percent of April 1 Average	In inches	In Percent of April 1 Average
Ash Creek	Blue Lake	6,800	12.6	36.8	292		
Big Valley	Eagle Peak	7,200	15.9				
Burney Creek	Thousand Lakes	6,500	38.1	67.4	177	57.8	152
Butte Creek	Humbag Summit	4,850	12.1	13.4	111	0.0	
	Silver Lake Meadows	6,450	30.5	58.6	192	37.0	121
Cow Creek	New Manzanita Lake	5,900	8.1	5.1	63	0.0	
Digger Creek	Burney Springs	4,700	2.8	0.0		0.0	
Hat Creek	New Manzanita Lake	5,009	8.1	5.1	63	0.0	
Indian Creek	Independence Lake	8,450	41.3	120.0	290	105.0	254
Middle Fork Feather River	Mount Dyer No. 1	7,100	25.5	57.4	225	46.5	184
	Rowland Creek	6,700	18.5	47.7	258	35.3	191
	Yuba Pass	6,700	31.9	56.9	178	40.8	128
North Fork Pit River	Cedar Pass	7,100	17.2	52.7	306	50.0	291
Scott River	Middle Boulder No. 1	6,600	31.5	63.5	202	52.1	165
Shasta River	Little Shasta	6,200	20.6	59.8	290		
Shasta River	Parks Creek	6,700	36.6	84.5	231		
South Fork Pit River	Adin Mountain	6,350	13.6	35.4	260	27.5	202
Surprise Valley	Mount Bidwell	7,200	24.4	85.0	348		
Susan River	Fredonyer Pass No. 1	5,750	8.7				

* Snow courses are listed in order of elevation with each geographical group of watermaster areas.

** Data collected only at stations listed.

Streamflow

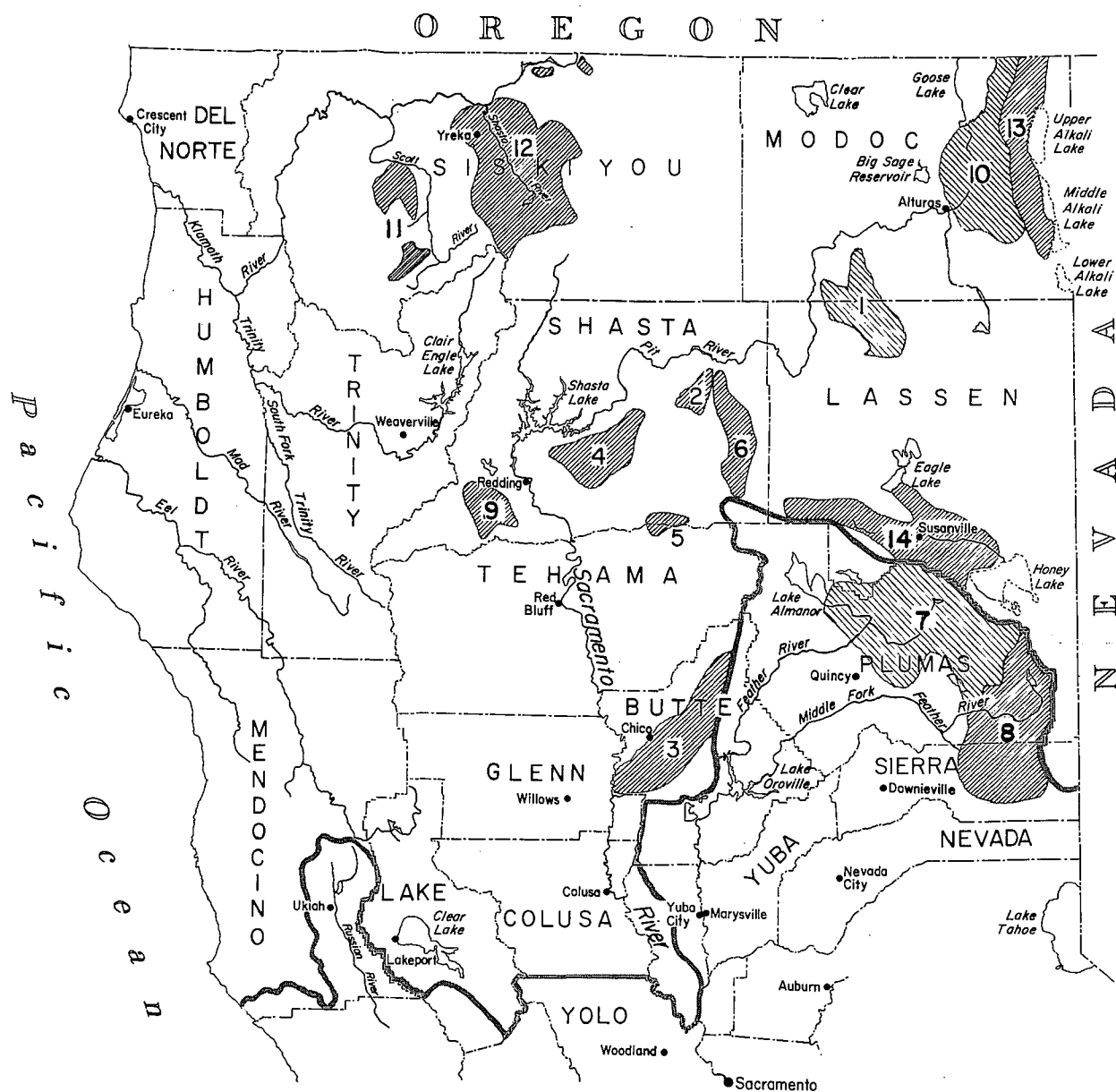
The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the U. S. Geological Survey as part of a Federal-State program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 5
RUNOFF, SELECTED STATIONS - 1983-84 (ACRE-FEET)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual Total	Ten Year Average	Percent of Average
Bidwell Creek near Fort Bidwell	350	570	1,310	1,000	880	2,440	3,230	12,630	7,900	2,260	680	490	33,740	17,520	192
Burney Creek at Burney	1,470	9,440	14,960	6,700	6,520	8,810	5,810	5,350	3,020	1,320	1,140	990	62,530	55,030	114
Butte Creek near Chico	10,600	38,480	97,550	42,350	32,670	42,330	28,090	23,290	15,860	11,650	9,941	7,422	360,200	302,800	119
NF Cottonwood Creek near Ono	1,710	12,100	44,450	12,750	9,950	10,690	6,870	3,410	1,580	590	500	830	105,400	141,600	74
Hat Creek near Hat Creek	10,980	12,260	12,210	11,670	10,360	11,140	10,760	14,070	13,790	11,680	10,600	10,060	139,600	102,900	136
Pit River near Canby	5,510	14,020	63,060	42,540	28,260	41,450	48,620	57,810	38,810	6,980	4,040	8,960	360,100	177,700	203
Scott River near Fort Jones	11,990	57,150	128,200	77,300	54,400	66,350	58,300	83,840	41,110	11,230	3,150	3,090	596,100	482,900	123
Shasta River near Yreka	12,000	18,380	40,370	29,020	19,590	20,330	16,020	10,410	5,377	2,743	2,247	5,207	181,700	138,400	131
Susan River at Susanville	1,152	6,641	9,556	4,992	5,911	13,380	13,010	10,530	6,873	6,387	3,800	547	82,780	71,360	116

Figure 1



WATERMASTER SERVICE AREAS

Table 6
1984 DECREEED WATER RIGHTS

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft ³ /s
1. Ash Creek	59	123.65
2. Burney Creek	11	33.09
3. Butte Creek	40	422.30
4. Cow Creek	86	56.367
5. Digger Creek	79	23.225
6. Hat Creek	57	135.545
7. Indian Creek	47	96.715
8. M.F. Feather River	105	372.079
9. N.F. Cottonwood Creek	13	30.30
10. M.F. Pit River	101	214.195
11. Scott River	83	102.04
12. Shasta River	164	620.422 1/
13. Surprise Valley	174	334.02
14. Susan River	204	352.182

1/ Includes Willow Creek near Ager which is based on a percentage of flow.

This portion of the report consists of 14 sections, one for each service area active in 1984, presented in alphabetical order.

Each of these sections begins with a description of the particular service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service". Under this heading are presented such data as the case number, date, and type of decrees; a brief summary of the decree or agreement that defines the water rights; the date the service area was created, and other related information.

These sections of the report also give data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. A map of the stream system, including diversion locations, roads, etc., is also included for each service area.

The water right ownerships are updated as of March 1 each year from County Assessors' records. Changes not on record by March 1 are therefore not reflected on the service area maps included in the various sections.

Since the purpose of this publication is to report the activities of the watermaster service, and because of the difficulty in keeping the data current, nothing herein should be construed as a determination of water rights. Furthermore, in some service areas there are diversions which may have been active but are not shown on the maps because they did not require the watermaster's attention during 1984.

As in previous years, watermaster service was begun on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decree. Service was continued in all areas through the growing season as long as needed.

The date service was started in each service area and the name of the watermaster in charge are listed on page 14.

TABLE 7
START-UP DATES AND WATERMASTERS

<u>Service Area</u>	<u>Date Service Began in 1984</u>	<u>Watermaster</u>
Ash Creek	May 1	C. Donald Hand
Burney Creek	June 1	C. Donald Hand
Butte Creek	April 1	Kenneth E. Morgan
Cow Creek	May 1	C. Donald Hand
Digger Creek	July 10	Kenneth E. Morgan
Hat Creek	May 1	C. Donald Hand
Indian Creek*	June 1	Jon A. Haman
M. F. Feather River*	March 15	Conrad Lahr
N. F. Cottonwood Creek	June 1	Kenneth E. Morgan
N. F. Pit River	April 1	Charles G. Hodge
Scott River	April 1	Lester L. Lighthall Kenneth E. Morgan
Shasta River	April 1	Lester L. Lighthall
Surprise Valley	March 19	Keithal B. Dick
Susan River	March 1	Virgil D. Buechler

* Within Central District; all others in Northern District

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is in Modoc and Lassen Counties near the town of Adin, about 100 miles northeast of Redding via Highway 299. Figure 2, page 19, shows the Ash Creek stream system and diversions, and the roads in the area.

The major sources of water for the service area are Ash Creek and three tributaries, Willow, Rush and Butte Creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area and flows northwesterly about 18 miles to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and the Pit River. Butte and Willow Creeks head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the Valley at Adin. It meets Willow Creek about 3 miles farther west, near the head of Ash Creek Swamp. The valley floor elevation in this vicinity is about 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley watermaster service area (no longer served). It has been served separately since April 3, 1959.

About 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The rest are along the upstream tributaries and in Ash Valley, east of Adin. The part of Big Valley served is about 10 miles long by 6 miles wide, extending from Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek, five; Willow Creek, four; Rush Creek, one; and Butte Creek, two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush Creeks comes mainly from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek get much of their water from springs. These creeks normally have enough water to satisfy demands until about June 1, after which the supply decreases rapidly. By the end of June, Ash Creek normally has receded to about 20 cubic feet per second (cfs), and Butte Creek to less than 1 cfs. The flow of these creeks then remains nearly constant for the rest of the season. Records of the daily mean discharge of stream gaging station, Ash Creek at Adin, is presented in Table 9, page 20.

Method of Distribution

Irrigation from Ash Creek and its tributaries uses numerous small dams to divert flow into systems of ditches. The ditches deliver the water to the

various fields for spreading. Wild flooding is the method most used, but some ranchers have checks and ditches and some use pumps to operate sprinklers or to lift water to higher spreading ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1984 Distribution

Watermaster service began May 1 and continued until September 30 with Donald Hand, Water Resources Engineering Associate, as watermaster.

Ash Creek

As usual the supply was adequate to fill all demands through late May and then dropped rapidly by mid June. Due to the change in ownership of the "Hunt Estate Ranch" to Akers Land and Cattle Company, flows were adequate to supply all demands throughout the season. This was due to the change in operation of this ranch and the problem Akers is having with the Department of Fish and Game and the Corps of Engineers regarding the swamp section of the ranch. When these problems are resolved, one can expect many more problems for the watermaster on this stream.

Willow Creek

By the end of May the flow had dropped to less than first and second priorities. The flow continued dropping into July where it leveled off approximately 50 percent of first and second priorities. One of the lower users started pumping water to sprinkler irrigate land not covered by this decree, but this operation was stopped as requested by the watermaster.

Butte Creek

First and second priorities were filled through mid May; after that only a portion of the first priority was filled.

Rush Creek

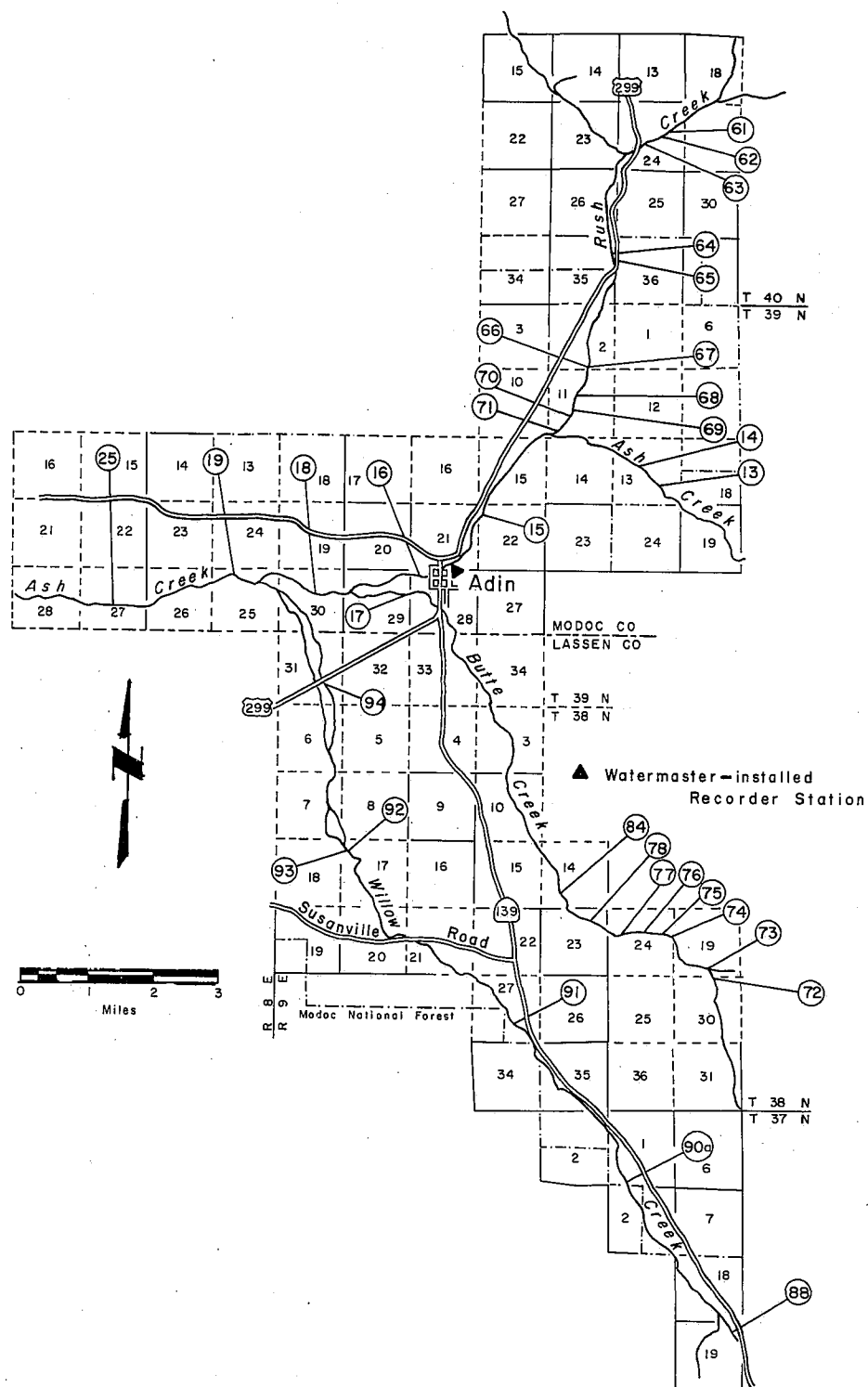
All users received their full water rights until early June, after this flow dropped to approximately 70 percent of the allotment.

TABLE 8

DIVERSIONS FROM ASH, RUSH, BUTTE, AND WILLOW CREEKS

<u>Ash Creek</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
7-10a	Bath, John	4.15
10	Bath, Fred	3.50
9	Akers Land & Cattle Co.	2.00
11	Downey, Paul	3.90
15	Wilson, David	0.45
	Nor-Cal Land & Cattle Co.	0.35
17	Mosely, Chas.	0.35
18	Chesley, Robert	2.18
13	Weigand, S.	4.23
13	Venaldes	0.12
13	Shevlin & Postula	0.45
17-18	Bower, Guy	1.18
	Smith, E. T.	0.40
	Reed, D. F.	0.60
	Moorhouse, R. F.	0.61
	McDonald Robert	0.05
	Nance, John	0.43
19-25	Megargel Drilling Co.	74.60
	Thompson, Robert	0.20
	Thompson, Melvin	0.10
	Armstrong, D.V.	0.10
25	Gerig, Norris	2.50
<u>Rush Creek</u>		
61-62	Scudero	0.18
63	Cantrell, Lloyd	0.12
63	Stevenson	0.30
	Nash, Roy	0.30
64-65	Reed, Donald	1.05
64	Tyrell	0.25
66	Papandrea, George	0.85
66	Reed, Donald	2.20
<u>Butte Creek</u>		
72-73	Landway Corp.	0.40
74-76	Haury	1.60
75-78	Lemke, Lester	0.04
	Dunn et al	0.19
	Ramming, James	0.04
84	Schmidt	1.00
75-78	Forby, James	0.13
<u>Willow Creek</u>		
88	Parks	0.85
90a	Hurst, Dan	0.10
	Moorhouse, Richard	0.04
	K.F.B-Partnership	0.18
	Kamiya, Tadao	0.04
	McIlucen, William	0.23
	Kennet, Fred	0.06
	Westover, Victor	0.07
	Wask, Frank	0.08
91	Waskey	0.50
92	Frosty Acres	3.90
92	Weigand	3.20
93-94	Hunt	3.20

Figure 2



DIVERSIONS FROM ASH CREEK WATERMASTER SERVICE AREA

ASH CREEK WATERMASTER SERVICE AREA

TABLE 9

1984 Daily Mean Discharge
(In cubic feet per second)

ASH CREEK AT ADIN

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	245	187	150	51	34	39	29
2	351	171	176	50	34	35	29
3	286	162	170	50	35	32	28
4	248	159	309	62	33	30	27
5	220	158	244	79	39	29	27
6	202	164	198	96	42	27	27
7	200	149	183	111	42	26	27
8	208	194	174	83	41	26	24
9	225	181	171	68	40	25	39
10	227	196	163	64	37	24	38
11	229	178	166	60	36	24	35
12	225	165	183	59	36	24	29
13	268	153	165	56	38	24	24
14	297	148	161	52	38	24	24
15	333	153	156	49	38	24	24
16	305	169	143	49	37	24	26
17	327	169	132	45	35	24	35
18	297	164	113	42	35	24	35
19	253	182	105	46	31	24	35
20	245	195	95	60	31	24	36
21	262	181	93	63	31	24	31
22	234	167	90	55	32	24	25
23	222	160	84	52	31	22	26
24	216	157	81	49	27	27	24
25	205	148	75	48	34	27	25
26	256	142	66	46	36	28	27
27	245	143	62	44	39	27	28
28	237	138	61	42	37	27	28
29	221	129	56	34	36	27	25
30	201	134	51	32	38	29	26
31	197		53		38	49	
MEAN	248	163	133	57	36	27	29
AC-FT	15250	9710	8190	3370	2200	1670	1710

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. Figure 3, page 23, shows the Burney Creek stream system, including the diversions and roads.

The source of water for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The part of the valley served by this stream is about 11 miles long and 2 miles wide and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the old Water Commission Act. The present service area was created on September 11, 1929.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed according to supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 on the northeast slopes of Burney Mountain. The creek normally has enough water for all demands until about the middle of June. The supply then gradually decreases until the end of July. For the rest of the irrigation season, runoff from perennial springs keeps the flow nearly constant at about 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 11, page 24. The stream gaging station on Burney Creek is downstream from four points of diversion, so the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases, by means of low diversion dams into ditches that convey it to the place of use. Lateral ditches are then used to irrigate the land.

1984 Distribution

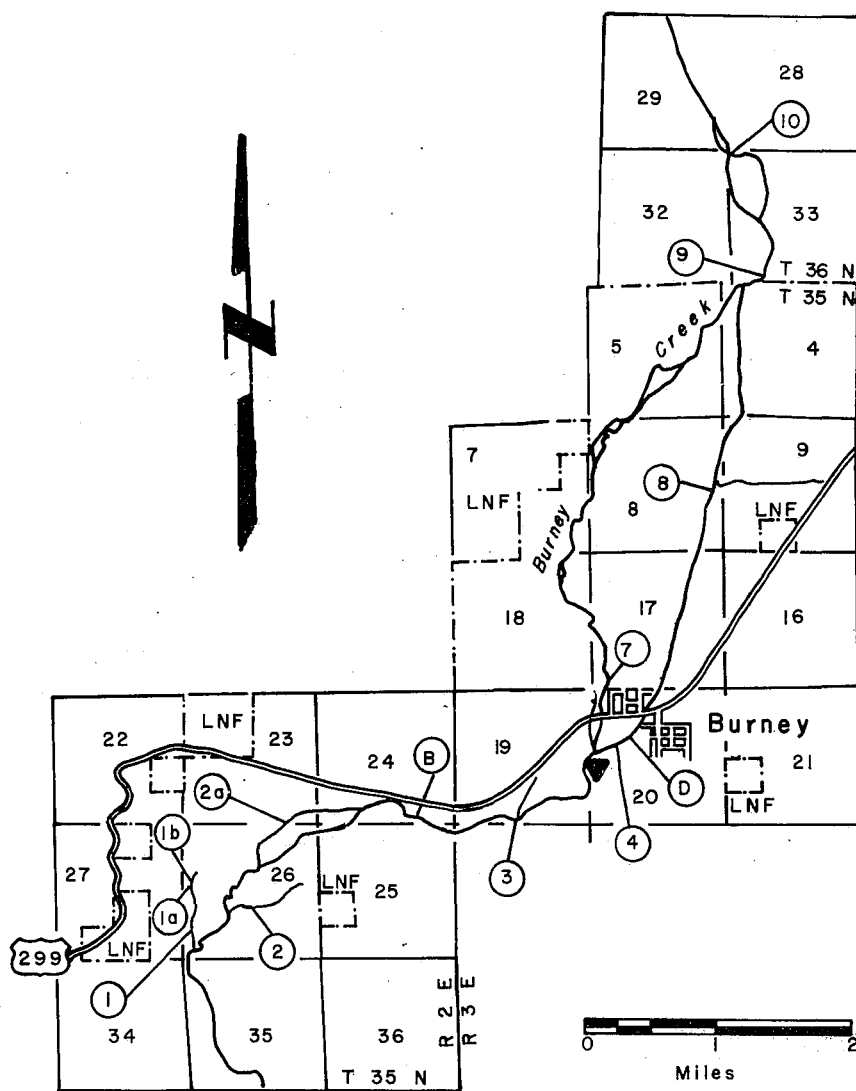
Watermaster service began June 1 and ended on September 30, 1984. Don Hand, Water Resources Engineering Associate, was the watermaster.

One hundred percent of allotments was maintained through mid-July. The flows gradually dropped to about 88 percent and held at this level for the rest of the season.

TABLE 10
DIVERSIONS FROM BURNEY CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1)		
2)	Whitmire	5.88
2a)		
1a)	Whitmire	0.75
1b)	Whitmire	0.20
3	Snooks	0.375
4	Geer - Cornez Ditch	12.34
7	Hathaway	12.34
8	Estes	4.895
	Cook	0.685
	Nachreiwier	1.73
9	H. C. Ranch	0.50
10	Pierpont	5.85
B	Publishers Forest Products (pump)	0.15
D	Tyler	0.11

Figure 3



▲ Permanent recorder station DWR Burney Creek near Burney

DIVERSIONS FROM BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

TABLE 11

1984 Daily Mean Discharge
(In cubic feet per second)

BURNEY CREEK NEAR BURNEY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		100	99	40	25	23	19
2		94	159	38	24	22	18
3		88	150	38	22	16	17
4		86	183	44	21	19	16
5		84	145	62	21	18	16
6		88	113	155	21	21	17
7		79	98	169	20	23	17
8		150	91	101	20	22	16
9		121	88	75	21	22	17
10		134	82	65	22	21	16
11		127	102	59	22	21	15
12		109	124	62	21	20	16
13		100	107	60	21	19	16
14		93	98	53	21	18	15
15		89	89	45	20	18	15
16		90	82	42	20	18	15
17		91	77	39	21	18	15
18		96	74	36	21	17	15
19		127	71	33	20	16	15
20		118	70	33	20	16	19
21		106	66	31	19	16	18
22		105	63	31	19	16	17
23		99	64	30	20	17	16
24		91	61	27	21	16	16
25		83	55	27	21	16	17
26		81	54	27	22	16	18
27		80	52	26	26	16	18
28		76	48	24	25	15	17
29		72	45	24	24	15	16
30		71	44	25	24	19	20
31			41		23	23	
MEAN		97.6	86.9	50.7	21.5	18.5	16.6
AC-FT		5810	5350	3020	1320	1140	990

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is in Butte County a few miles southeast of the City of Chico. The watermaster service area runs about 11 miles along Butte Creek, starting about 4 miles east of Chico and running downstream to the crossing of the Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet. Figure 4, page 29 is a map of the Butte Creek stream system.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for redistribution (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

On September 18, 1969, the Water Resources Control Board granted permits for the following applications to take water from Butte Creek: application 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains about 150 square miles of the western slope of the Sierra Nevada Mountains in the northeasterly part of Butte County above the watermaster service area. The highest elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs continue to produce flows of more than 40 cfs. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 13, 14 and 15, pages 30, 31 and 32.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity

into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1984 Distribution

Watermaster service began April 1 in the Butte Creek service area and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate as watermaster.

The water supply for the 1984 irrigation season was near normal. Sufficient water was available to satisfy all rights until June 21. A portion of the surplus class water was available from June 22 through September 30.

There was a steady release through De Sabla Powerhouse all season.

TABLE 12

WATER RIGHT PRIORITY

Diversion Number	Water Right Owner	Priority			Surplus cfs	Import cfs	Application Permit cfs
		1st cfs	2nd cfs	3rd cfs			
<u>Butte Creek</u>							
50	M. & T., Incorporated Parrott Ranch Company Burke et al. Dayton Mutual Water Co.	3.00 16.00		3.33 <u>1</u> /	25.00 25.00	53.33 <u>1</u> / 53.33 <u>1</u> /	
53 <u>2</u> /	U. S. Dept. of Agriculture	2.00					
54	Patrick	5.00					13.00 <u>3</u> /
55	Camenzind et al.	5.00					6.50 <u>3</u> /
56	Durham Mutual Water Co. Butte Creek Country Club Geiger Dixon Domom Brothers Logan Vernoga Konyn - Amerio Bebich Jugum Whelock	44.70 2.00 0.48 0.39 0.67 0.01 1.447 0.40 0.446 0.447 0.26					
	Total	51.25					
57 <u>2</u> /	Coats	3.89					
58 <u>2</u> /	Wakefield	0.43					
58A <u>2</u> /	Hansen				2.50		
588 <u>2</u> /	Lewis	2.00					
598 <u>2</u> /	Adams Esquon Ranch	0.39					
60	Adams Esquon Ranch		6.00	0.75	21.25		107.00 <u>4</u> /
60A <u>2</u> /	Keeney et al.	0.66					
61	Gorrill Land Company <u>5</u> /	1.00 <u>6</u> /		20.70 <u>5</u> /		68.00 <u>4</u> /	
62 <u>2</u> /	White, Mead, McAlister, & Ryon		1.00	9.50			
<u>Hamlin Slough</u>							
	Adams Esquon Ranch	16.60					
	Gorrill Land Company	21.70 <u>6</u> /					

^{1/} Water imported by PGandE from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses.

^{2/} Pumps.

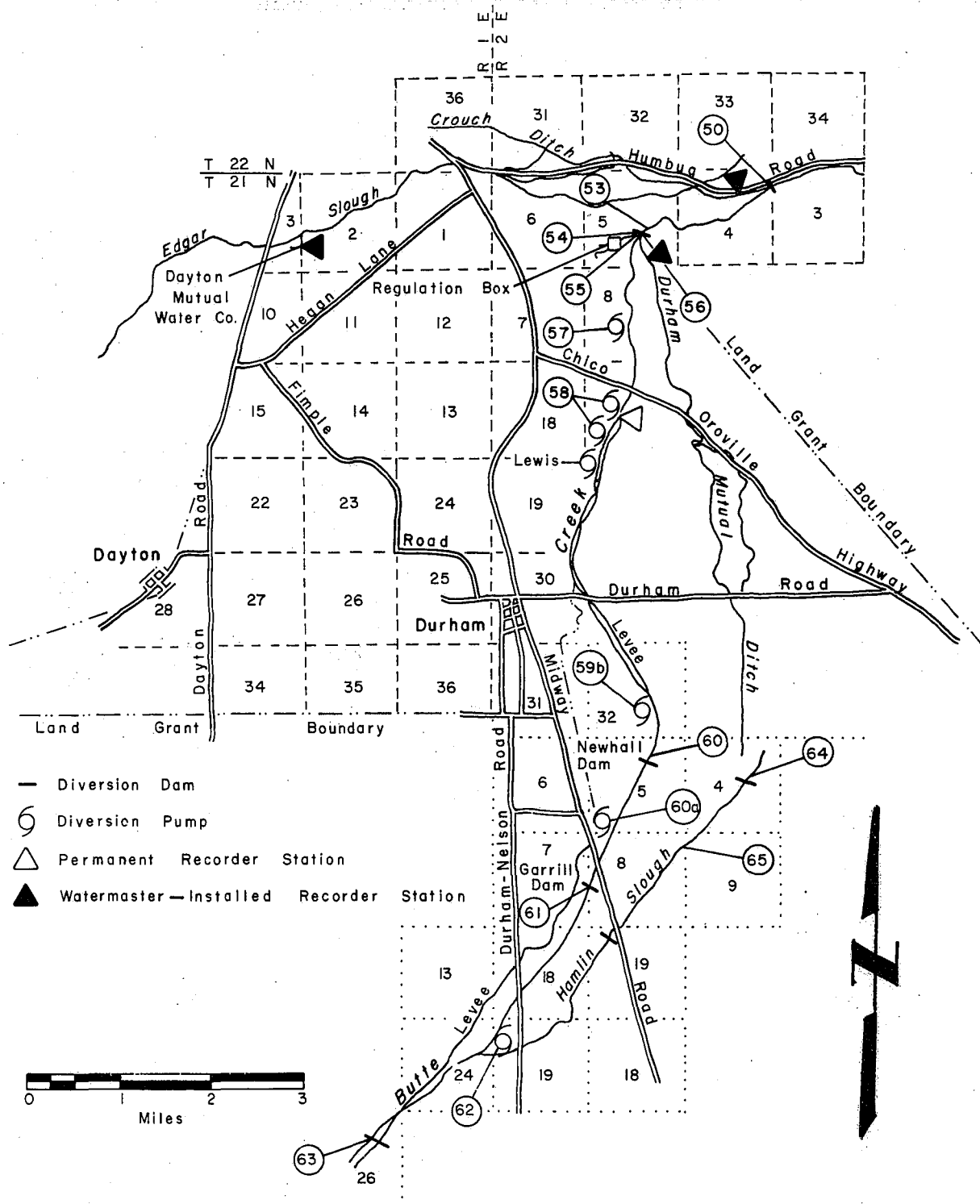
^{3/} March 1-June 30.

^{4/} March 15-June 15.

^{5/} See Hamlin Slough.

^{6/} Total diversions from Butte Creek and Hamlin Slough not to exceed 21.70 cfs.

Figure 4



DIVERSIONS FROM BUTTE CREEK,
BUTTE CREEK WATERMASTER SERVICE AREA

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 13

1984 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR CHICO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	469	549	406	308	183	186	102
2	474	534	455	300	191	185	94
3	465	500	433	297	182	185	93
4	449	497	434	303	169	185	92
5	436	489	417	316	164	184	92
6	429	493	406	334	164	183	92
7	428	470	396	401	163	182	92
8	424	538	395	335	160	179	143
9	418	504	397	306	140	178	156
10	413	543	395	303	196	177	150
11	409	539	403	295	206	172	158
12	405	503	420	292	204	171	147
13	1080	482	417	298	210	171	139
14	1380	463	411	292	209	169	139
15	1470	456	390	289	207	170	137
16	1270	452	370	280	211	172	137
17	1130	450	376	267	215	169	135
18	972	489	370	243	217	167	137
19	905	522	363	237	211	165	133
20	865	489	363	241	194	164	149
21	827	464	362	227	191	163	135
22	750	453	356	228	190	160	127
23	692	445	355	221	188	151	125
24	671	436	349	216	191	170	125
25	643	423	345	208	188	160	130
26	623	413	338	198	189	160	122
27	601	404	330	191	187	137	120
28	577	393	329	193	186	95	114
29	559	389	328	191	187	85	110
30	542	382	317	186	190	85	117
31	563		314		189	132	
MEAN	688	472	379	267	189	162	125
AC-FT	42330	28090	23290	15860	11650	9940	7420

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 14

1984 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR DURHAM

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	427	573	199	96	40	29	35
2	425	563	243	79	40	27	28
3	414	524	244	72	39	30	25
4	399	514	260	73	41	29	24
5	386	509	245	78	37	30	24
6	380	512	227	96	33	30	24
7	378	491	192	168	29	29	24
8	377	555	184	128	29	27	30
9	378	532	179	114	26	24	37
10	374	571	193	103	29	22	41
11	374	574	226	97	48	20	41
12	373	535	236	94	45	21	42
13	999	493	245	92	46	22	42
14	1350	448	257	96	46	22	43
15	1470	414	232	93	47	22	44
16	1260	394	198	80	48	23	45
17	1140	384	192	71	46	26	47
18	946	420	185	63	46	25	49
19	871	452	178	55	45	25	49
20	833	420	172	52	39	26	47
21	799	385	152	48	35	26	43
22	732	374	146	47	34	26	38
23	679	367	131	52	34	22	34
24	660	334	125	49	37	25	32
25	638	295	131	47	39	25	31
26	618	284	128	44	37	25	30
27	602	272	137	39	31	36	25
28	579	250	137	33	28	28	26
29	576	210	133	31	28	20	22
30	562	187	128	37	27	19	22
31	582		113		27	37	
MEAN	664	428	185.4	74.2	37.3	25.7	33.2
AC-FT	40820	25460	11400	4420	2290	1580	1970

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 15

1984 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL ABOVE BUTTE CANAL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		116	116	115	61	87	0
2		116	115	116	60	82	0
3		116	114	115	56	87	0
4		117	114	116	53	83	0
5		116	114	116	52	86	0
6		116	114	116	52	86	0
7		115	114	117	50	86	0
8		117	114	116	50	84	61
9		116	114	116	48	84	61
10		118	114	116	95	82	60
11		116	116	91	95	78	60
12		116	117	91	93	75	47
13		116	117	113	100	77	46
14		115	118	114	98	78	46
15		116	111	113	99	77	46
16		115	117	103	104	76	45
17		116	117	99	106	76	46
18		118	116	95	106	76	45
19		110	116	91	104	76	43
20		114	117	88	88	74	44
21		114	117	86	87	74	45
22		114	117	82	86	69	37
23		114	118	78	85	65	37
24		115	117	75	89	61	35
25		115	116	75	90	64	36
26		115	116	71	90	66	30
27		115	116	68	90	4.0	30
28		114	116	66	89	0	30
29		114	116	65	89	0	28
30		114	116	63	87	0	34
31			116		87	0	
MEAN		115	116	96	82	65	33
AC-FT		6849	7100	5714	5027	3986	1964

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Figures 5 through 5c, pages 35 through 41, show the Cow Creek stream system, including the diversions and major access roads.

Water for this service area comes from three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow in a westerly direction to their confluence in the Millville-Palo Cedro area and thence south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

<u>Creek</u>	<u>Decree No.</u>	<u>Date</u>
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees except for the Oak Run Creek decree, which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

Water for this service area comes mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists mainly of low brushy hills that do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter months normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 19, page 42. The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster mainly to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches that convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1984 Distribution

Watermaster service began May 1 in the Cow Creek service area and continued until October 28. Donald Hand, Water Resources Engineering Associate, was the watermaster.

There was surplus water in all streams of the service area through August. Some creeks then receded but still provided 100 percent of all allotments.

Cedar Creek

There was surplus flow available for all users throughout the entire season.

North Cow Creek

Surplus water was available to North Cow Creek users throughout the entire irrigation season. Regulation of the various ditches was to see that the surplus waters were shared by all.

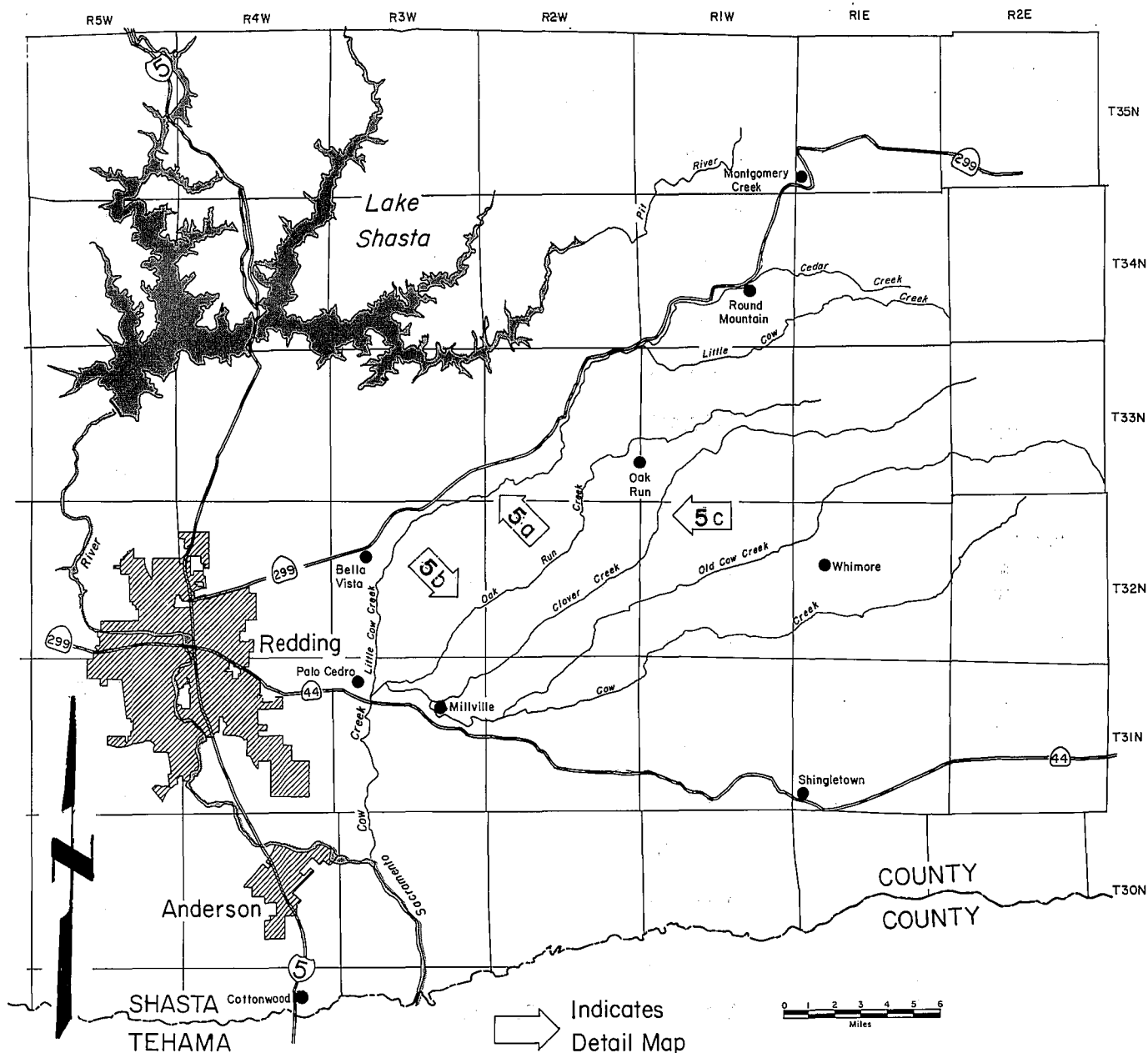
Clover Creek

There was surplus flow below the Millville Ditch, the lowest diversion, until late August. After that, the available water supply was enough to supply 100 percent of all allotments through October 30.

Oak Run Creek

The water supply to Oak Run Creek diverters was adequate throughout the season, with some surplus below the last diversion, much of the time.

Figure 5

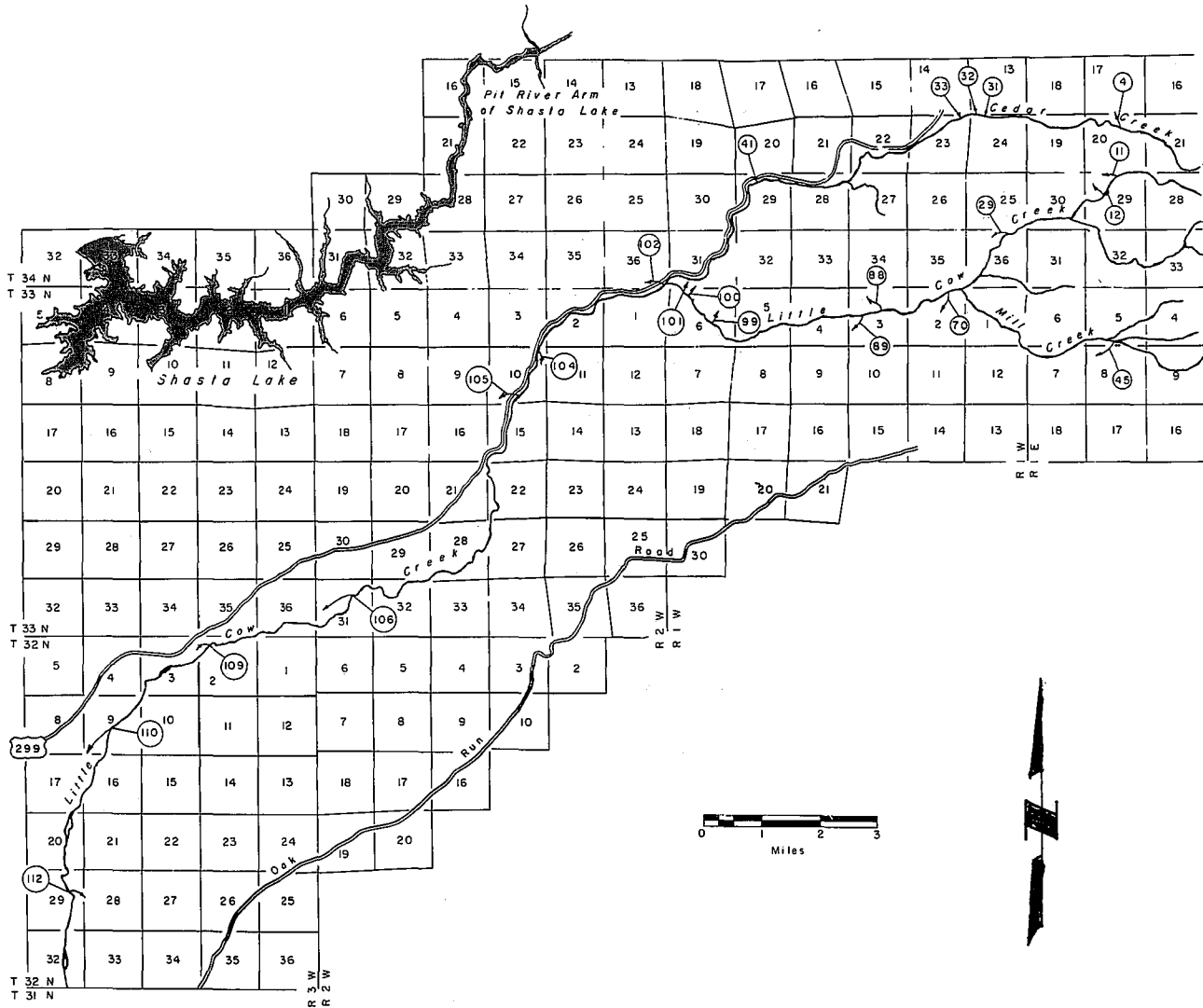


INDEX MAP COW CREEK WATERMASTER SERVICE AREA

TABLE 16
DIVERSIONS FROM COW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
4	Bishop	0.50
11	McMillian	0.46
12	Benbow	0.63
29	Grant-Pherson-Jones	2.60
31	Spaulding-Haley	1.30
32	Halcomb	4.00
33	Roe	0.30
41	Hadley (pump)	0.80
45	Export Water to Oak Run Creek	5.00
70	Nichols	0.31
88	Ruthford	1.80
89	Bobich	0.47
99	Shaw	0.10
100	Emerald	0.25
101	Porteous	0.45
102	Hendrix	0.30
104	Artadel Mining Company	0.04
105	Artadel Mining Company	0.55
106	Rickert	4.35
109	Matthews (pump)	0.10
110	Cook & Butcher	4.50
112	Boyle (pump)	0.40

Figure 5a



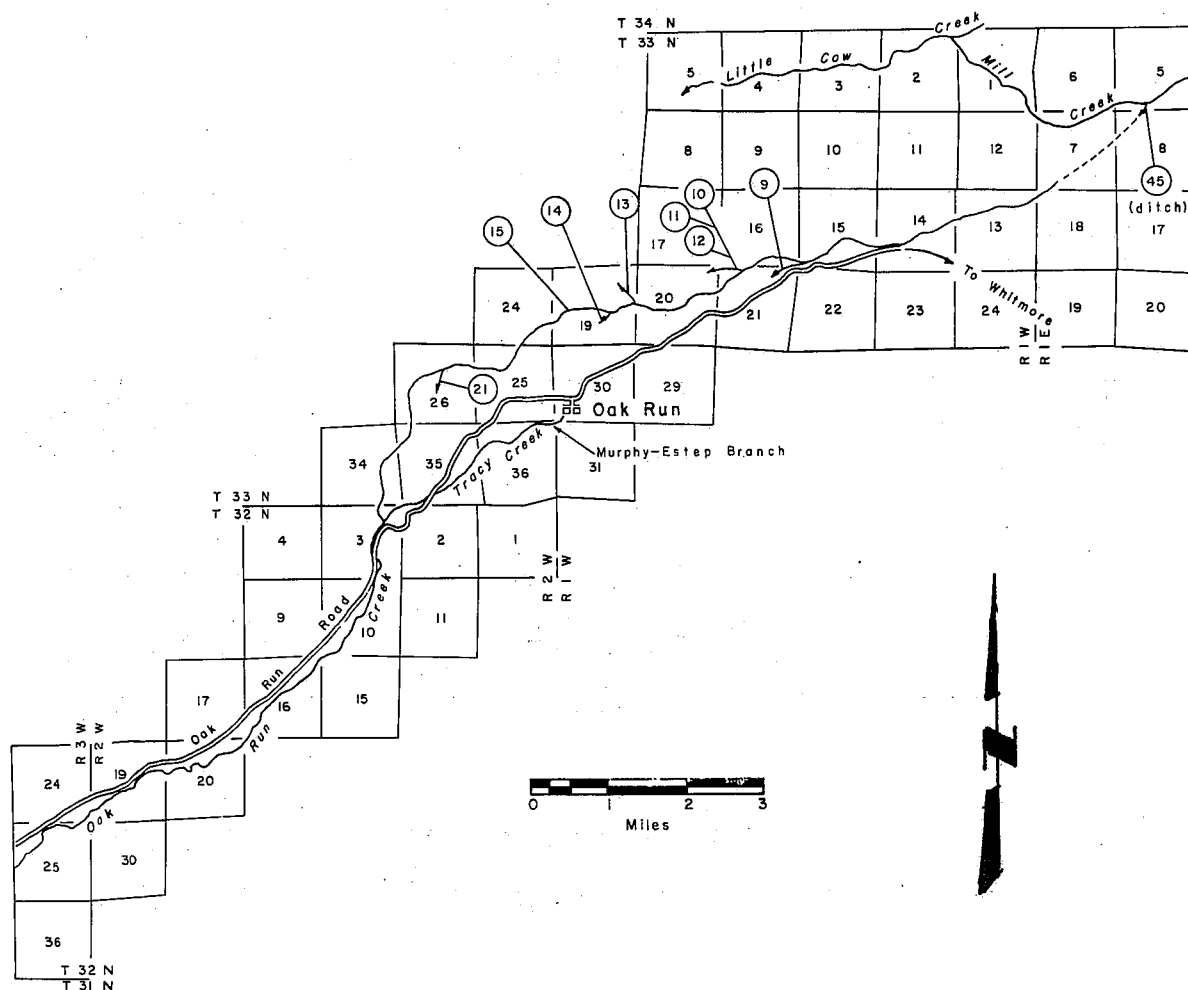
DIVERSIONS FROM COW CREEK,
COW CREEK WATERMASTER SERVICE AREA

TABLE 17
DIVERSIONS FROM OAK RUN CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
45	Welsh-Strayer Ditch from Mill Creek to Oak Run Creek	5.00
9	Welsh-Strayer Rediversion	2.30*
10	Pedmore Upper	
11	Pedmore Lower	0.25
12	Pedmore South	
13	Alpaugh	0.65
14	Pedmore	0.65
15	Kerkendahl	0.65
21	Winters (Surplus)	0.395

* When flow of Oak Run Creek at Diversion 9 is less than 5.40 cfs, including foreign water from Mill Creek, the flow at Diversion 9 will be divided 43 percent into Diversion 9 and 57 percent to Oak Run Creek.

Figure 5b

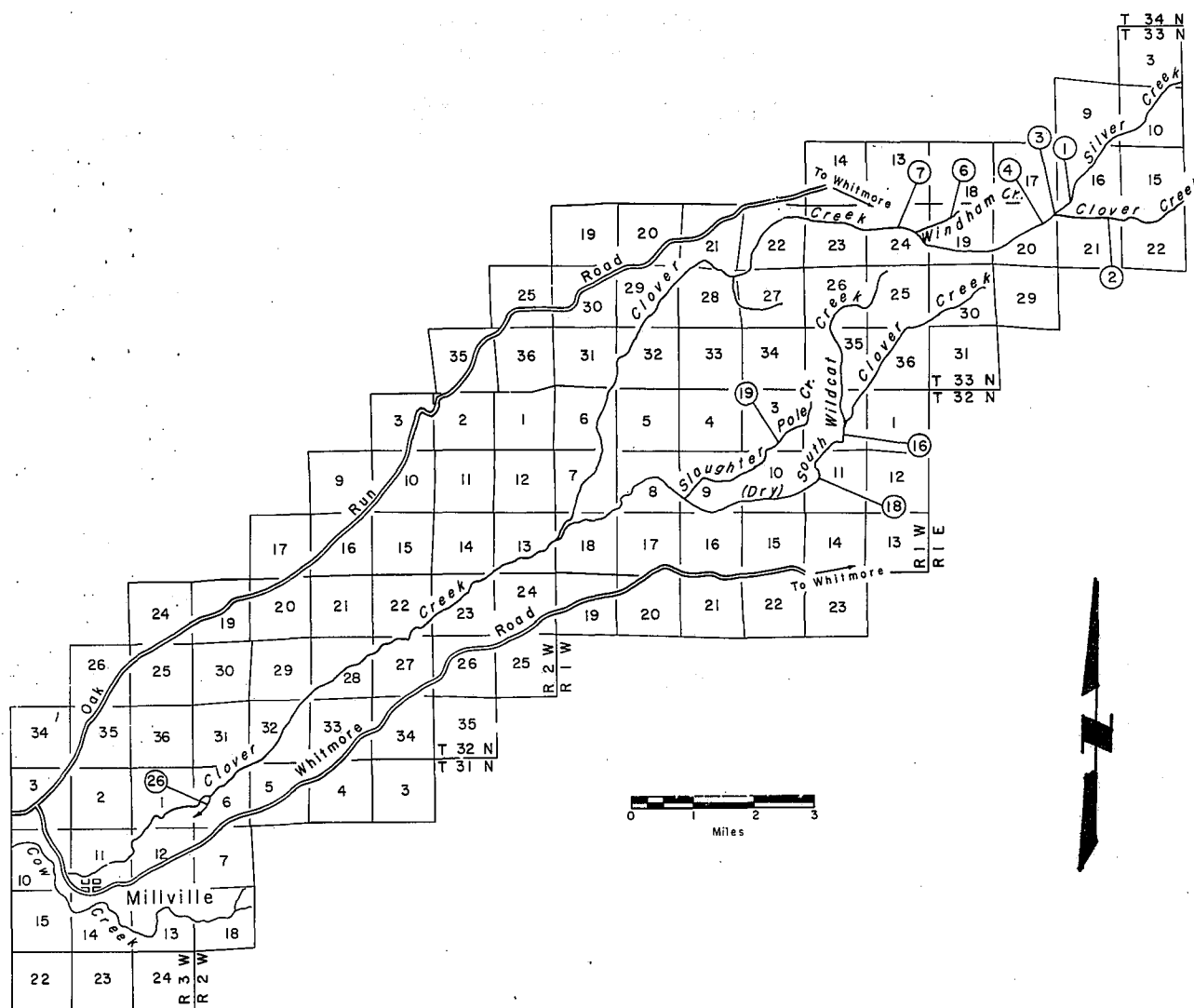


DIVERSIONS FROM OAK RUN CREEK, COW CREEK WATERMASTER SERVICE AREA

TABLE 18
DIVERSIONS FROM CLOVER CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
1	Worley Ditch	2.74
2	Guttman Ditch	1.85
3	Bonde Ditch	1.30
4	Mill Ditch	5.45
6	Maxwell Ditch	0.35
7	Welch-Nailer Ditch	2.15
16	Harper-Covey	0.50
18	Hunt	0.40
19	Slaughter Pole Ditch	0.40
26	Millville Ditch	6.50

Figure 5c



DIVERSIONS FROM CLOVER CREEK, COW CREEK WATERMASTER SERVICE AREA

COW CREEK WATERMASTER SERVICE AREA

TABLE 19

1984 Daily Mean Discharge
(In cubic feet per second)

DAY	MARCH	APRIL	NORTH COW CREEK NEAR INGOT			AUGUST	SEPTEMBER
			MAY	JUNE	JULY		
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
			NO RECORD FOR 1984				
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
MEAN							
AC-FT							

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms part of the boundary between Shasta and Tehama Counties. It drains about 45 miles on the western slopes of the Sierra, just west of Lassen National Park. The creek flows west through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, lies about 40 miles northeast of Red Bluff. A map of the Digger Creek stream system is presented as Figure 6, page 47.

Basis of Service

The rights to use of the waters of Digger Creek were determined by five court adjudications. The Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed in Table 20, on page 44.

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land alongside the stream so that all run-off water returns to Digger Creek. The lower users are located within a 5 square mile area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not related to those of lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first priority allotments, and the lower users have second and third priority allotments.

Water Supply

Precipitation, mainly in the winter, is typical of Northern California foothills. Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the irrigation season, but serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below the mouth of the South Fork is presented in Table 22, page 48.

Method of Distribution

Irrigation is done mainly by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1984 Distribution

Watermaster service began on June 10 and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The available water supply on Digger Creek was near normal. All water rights were filled during 1983. There was a surplus flow past the lowest diversion during the season.

The Forward Powerhouse is required to bypass 3 cfs for fish flows.

The streamflow station Digger Creek below South Fork Branch will indicate a much lower flow now that the Forward Powerhouse diverts into Mill Ditch at a much greater flow.

TABLE 20

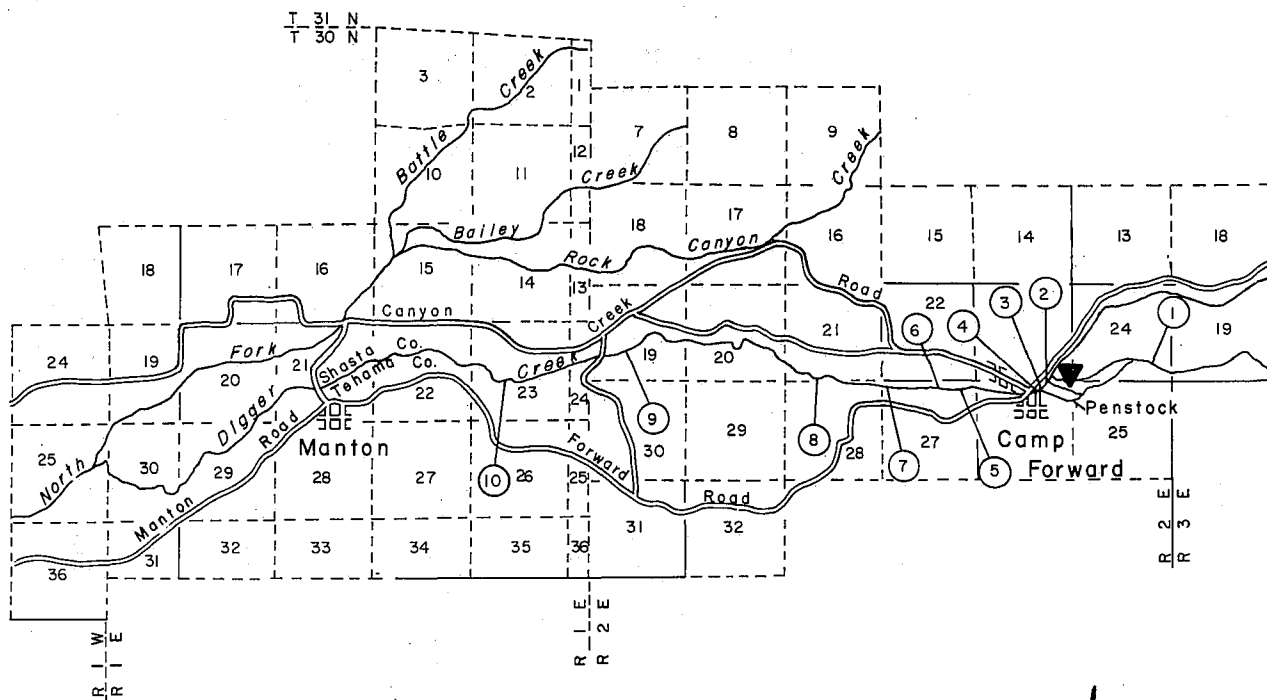
DECREEES DEFINING DIGGER CREEK WATER RIGHTS

<u>Case</u>	<u>Decree No.</u>	<u>Date Entered</u>
Gransbury V. Edwards	2213	August 12, 1899
Wells V. Pritchard	2114	May 27, 1913
Harrison et al V. Kaler etal	3327	October 16, 1917
Herrick V. Forward	4570	February 24, 1927

TABLE 21
DIVERSIONS FROM DIGGER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,3-5	Forward Brothers	7.65
6	Wright	0.50
	Pritchard	0.375
	Pritchard	2.25
7	Pritchard	0.45
8	Boole Ditch	7.90
9	Williams Ditch	1.10
10	Crooker-Harrison Ditch	3.00

Figure 6



▲ Watermaster - installed recorder station.



DIVERSIONS FROM DIGGER CREEK,
DIGGER CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA

TABLE 22

1984 Daily Mean Discharge
(In Cubic Feet Per Second)

DIGGER CREEK BELOW SOUTH FORK BRANCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1						9.8	7.6
2						9.6	7.2
3						9.6	6.4
4						9.3	6.0
5						9.3	5.6
6						9.0	5.6
7						9.0	5.0
8						9.6	5.0
9						9.3	4.7
10					19	9.3	4.4
11					18	9.3	3.8
12					18	9.0	3.8
13					17	8.0	4.4
14					17	7.2	9.6
15					16	7.2	6.0
16					15	7.2	4.7
17					15	7.6	4.1
18					15	7.2	4.7
19					14	6.8	4.7
20					14	6.8	13
21					13	6.4	5.3
22					13	6.8	5.0
23					13	6.4	5.0
24					12	6.0	5.0
25					12	6.4	5.0
26					11	6.8	4.7
27					11	6.0	3.8
28					10	5.6	2.9
29					10	5.6	2.9
30					10	16	7.2
31					9.8	11	
MEAN					-	8.2	5.4
AC-FT					-	502	324

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek service area is in the eastern part of Shasta County, north of Lassen Volcanic Park. The maps, Figures 7 through 7b, pages 51 through 55, show the Hat Creek service area and stream system, including locations of the diversions of the upper and lower user groups.

Hat Creek, which flows north through the area, is the only source of water in the service area. The place of use is Hat Creek Valley, which is about 20 miles long and 2 miles wide, running north from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups for the period of May 1 to October 28 annually, Decree No. 7858 established three allotments for continuous irrigation, May 1 through October 28, allotments for the period October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and ending at 6 a.m., October 28. All water rights are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 154.7 cfs and lower users require 166.5 cfs. The lower users require more because of additional channel loss. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply of Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt creates a high flow during May and June, but most of the summer supply comes from large springs that decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the porous soil. Diversion dams built across the creek divert

water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

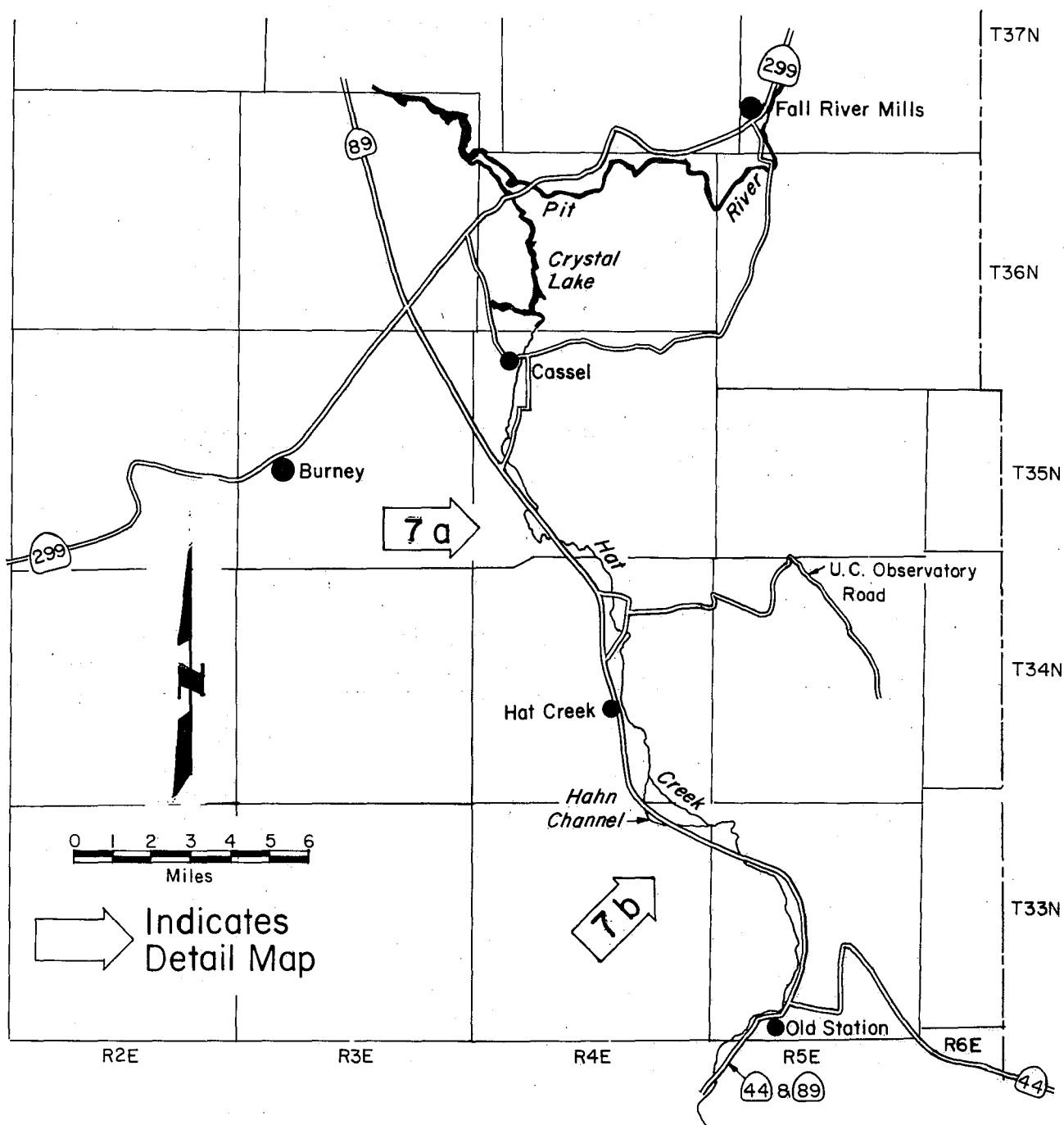
1984 Distribution

Watermaster service began on May 1 and continued until October 28 with Donald Hand, Water Resources Engineering Associate, as watermaster.

The season started on May 1 with the creek flow exceeding demand. All users got 100 percent of their right throughout the season. This was another outstanding year on Hat Creek.

The only problem encountered was keeping the rotation going, as some users felt they could use water any time because of the high flows.

Figure 7



INDEX MAP HAT CREEK WATERMASTER SERVICE AREA

TABLE 23

DIVERSIONS FROM LOWER HAT CREEK

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
20,21	Lonquist, Upper, Lower	4.50 ^{1/}
22	Reiger	7.00 ^{1/}
23	Lonquist	2.50 ^{1/}
24	Morris, Upper	13.50 ^{2/}
25	Morris, Lower	22.25 ^{2/}
26	Lonquist-Reynolds-Bidwell	15.00 ^{1/}
27	Lonquist-Reynolds, East Side	3.50 ^{1/}
28	Lonquist-Reynolds, Middle	0.50
29	Reynolds Diversion	4.00 ^{1/}
30	Bone, Upper (Indian, not in WSA)	0.50
31	Bone, Lower (Indian, not in WSA)	0.50
32	Bone (Indian, not in WSA)	1.00
33	Wilson (Indian, not in WSA)	5.50
34	Williams (Indian, not in WSA)	0.75
35	Wilson (Indian, not in WSA)	2.75
36	Brown, Upper	3.00
37	Brown	11.50
38	Brown, Lower	3.25
39	Snook	0.50
40	Doyel	20.00
41	Giessner	10.25
42	Giessner	8.00

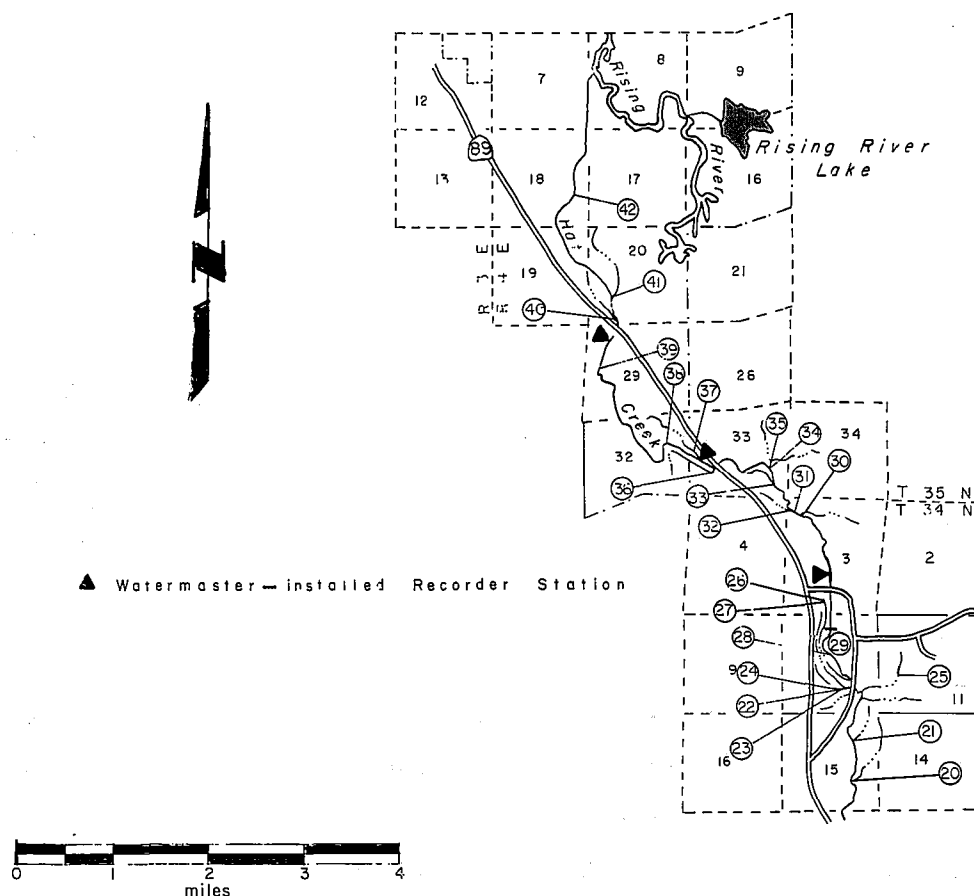
DIRECT DIVERSIONS FROM HAT CREEK

37a	Hat Creek	2.50
40a	Hat Creek	6.25
42a	Hat Creek	8.00

<u>1/</u>	Total water right
<u>2/</u>	Upper and Lower user

NOTE: Upper and Lower users are on a ten-day rotation. Minimum flows allowed in each ditch when not on irrigation schedule.
The above water rights do not include the mud flow right defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 7a



DIVERSIONS FROM LOWER HAT CREEK,
HAT CREEK WATERMASTER SERVICE AREA

TABLE 24
DIVERSIONS FROM UPPER HAT CREEK

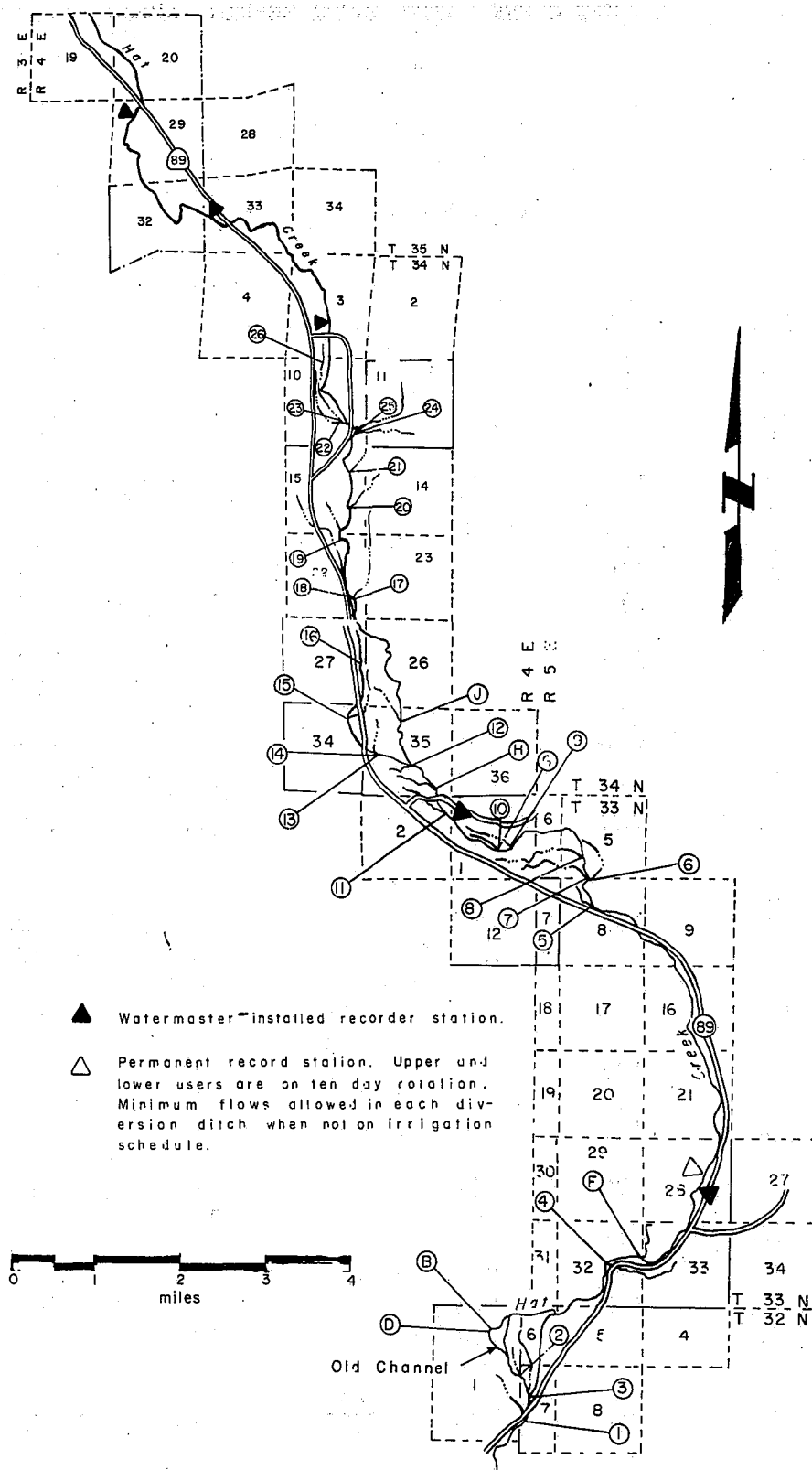
<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
1,2	Wilcox, Upper, Lower	2.125
3	Stevenson	2.375
4	Hall	2.750
5	Brown	0.500
6	Hawkins	2.250
7	Wilcox, Upper	7.125
8	Wilcox	22.375
9	Wilcox-Davis	5.000
10	Wilcox, Lower	1.000
11,12	Valentine, Upper, Lower	10.000
13,15	Heryford, Upper, Lower	1.000
14	Heryford, Middle	1.500
16	Snook	5.375
17	Ratledge-Lonquist	5.375
18	Ratledge-Opdyke-USFS	6.750
19	Opdyke	12.000
20, 21	Lonquist, Upper, Lower	<u>1/</u>
22	Reiger	7.000 <u>1/</u>
23	Lonquist	<u>2/</u>
24	Morris, Upper	13.500
25	Morris, Lower	22.250
26	Lonquist-Reynolds-Bidwell	15.000
B	Consterdine	0.560
D	Stevenson	7.781
D,3	Total Allotment	10.356
F	Shearon	0.960
G,H	Grant, Lower	0.500
J	Domestic	0.500

1/ Both Lower and Upper Hat Creek users

2/ Lower Hat Creek users

NOTE: The above water rights do not include the mud flow rights defined in Paragraphs 21 and 22 of the Hat Creek Decree.

Figure 7b



DIVERSIONS FROM UPPER HAT CREEK, HAT CREEK WATERMASTER SERVICE AREA

HAT CREEK WATERMASTER SERVICE AREA

TABLE 25

1984 Daily Mean Discharge
(In cubic feet per second)

HAT CREEK NEAR HAT CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	178	180	180	252	211	174	178
2	178	179	182	244	211	172	177
3	177	179	191	240	211	172	176
4	176	179	203	261	209	175	175
5	176	178	201	253	209	174	174
6	176	178	195	265	213	170	174
7	176	177	195	259	209	169	174
8	177	184	203	234	204	170	171
9	177	179	215	229	196	175	162
10	177	179	222	227	193	178	162
11	177	176	248	222	190	178	163
12	177	176	270	216	187	178	163
13	189	175	261	218	185	178	163
14	187	178	254	220	182	177	162
15	185	183	233	223	178	177	162
16	183	189	218	227	181	177	166
17	181	189	213	232	184	177	167
18	181	190	208	232	187	177	166
19	181	186	220	234	184	172	168
20	183	182	237	230	182	167	177
21	185	178	237	221	183	166	171
22	183	180	237	218	183	166	170
23	182	186	247	218	182	166	167
24	183	188	241	220	182	166	169
25	183	185	237	220	181	166	169
26	186	182	247	219	179	162	169
27	186	179	245	216	178	163	169
28	185	176	252	218	178	163	169
29	184	175	265	219	182	172	169
30	182	178	273	213	180	183	169
31	182		263		177	184	
MEAN	181	181	229	230	190	172	169
AC-FT	11104	10760	14070	13690	11680	10600	10060

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek service area is in north central Plumas County, near Greenville.

The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It flows through Genesee and Indian Valleys and past Taylorsville and Crescent Mills to where it joins the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Maps of the whole area and of each major stream system within the Indian Creek service area are presented as Figures 8 through 8c, pages 59 through 65.

Basis of Service

The Indian Creek watermaster service area was created on February 19, 1951, to include, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 after entry of the decree. The statutory proceeding leading to the decree was entitled "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California".

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are 49 water right owners in the service area, with total allotments amounting to 96.715 cfs. Indian Creek decree establishes three priority classes for each major stream within the service area.

Water Supply

The water supply in the Indian Creek service area comes mainly from snowmelt, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights Creeks have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season until, by the end of August, only a small part of allotments is available.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley, and a few sprinkler systems are in use.

1984 Distribution

Watermaster service began in the Indian Creek service area on June 1 with Jon A. Haman, Water Resources Engineering Associate, as watermaster. The available supply in the service area was about average during the season.

Wolf Creek

The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) during the irrigation season due to reduced pumping at Diversions No. 67 and 68.

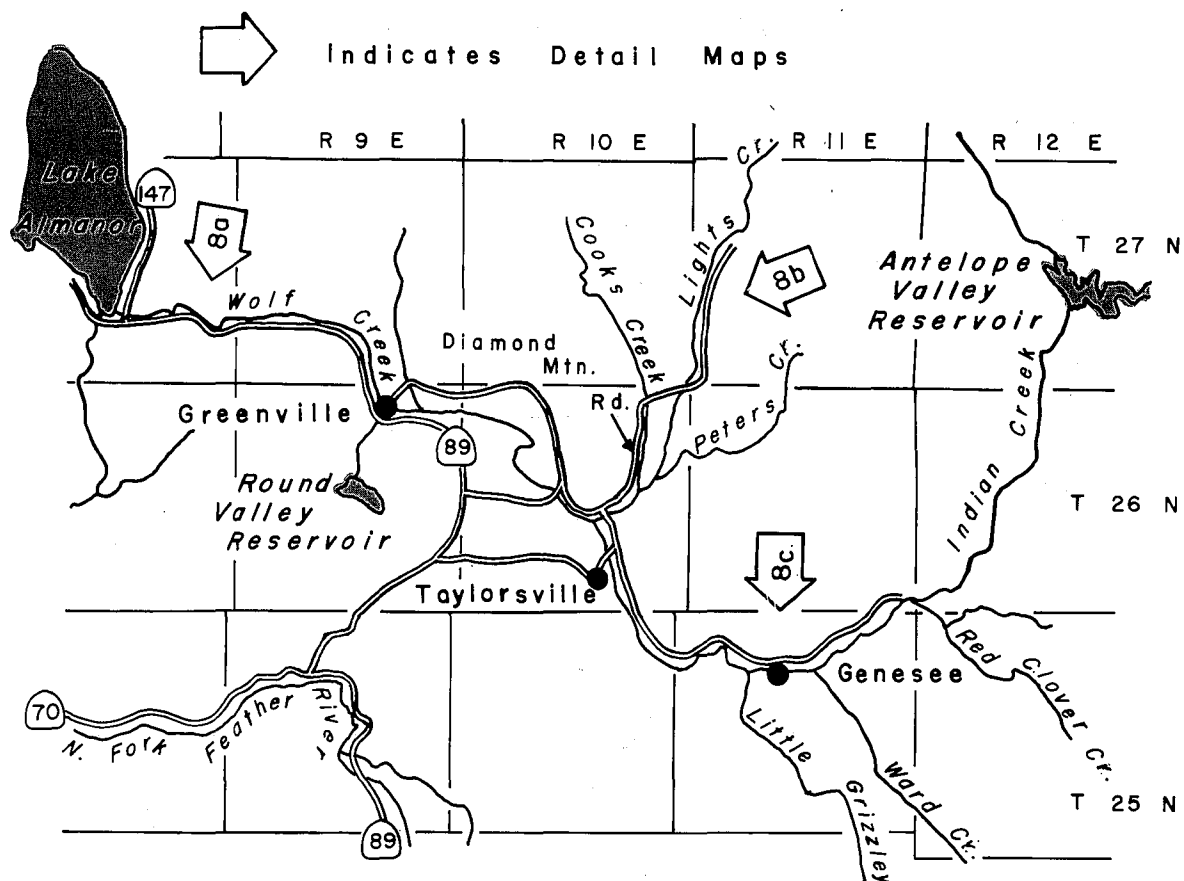
Lights Creek and Tributaries

On Lights Creek, the water supply was enough to satisfy all allotments (three priorities) through mid-June on Cooks Creek.

Indian Creek

The water supply of Indian Creek was enough for all allotments (three priorities) until mid-August.

Figure 8



(Served by: Department Water Resources-Central District,
Watermaster Service.)

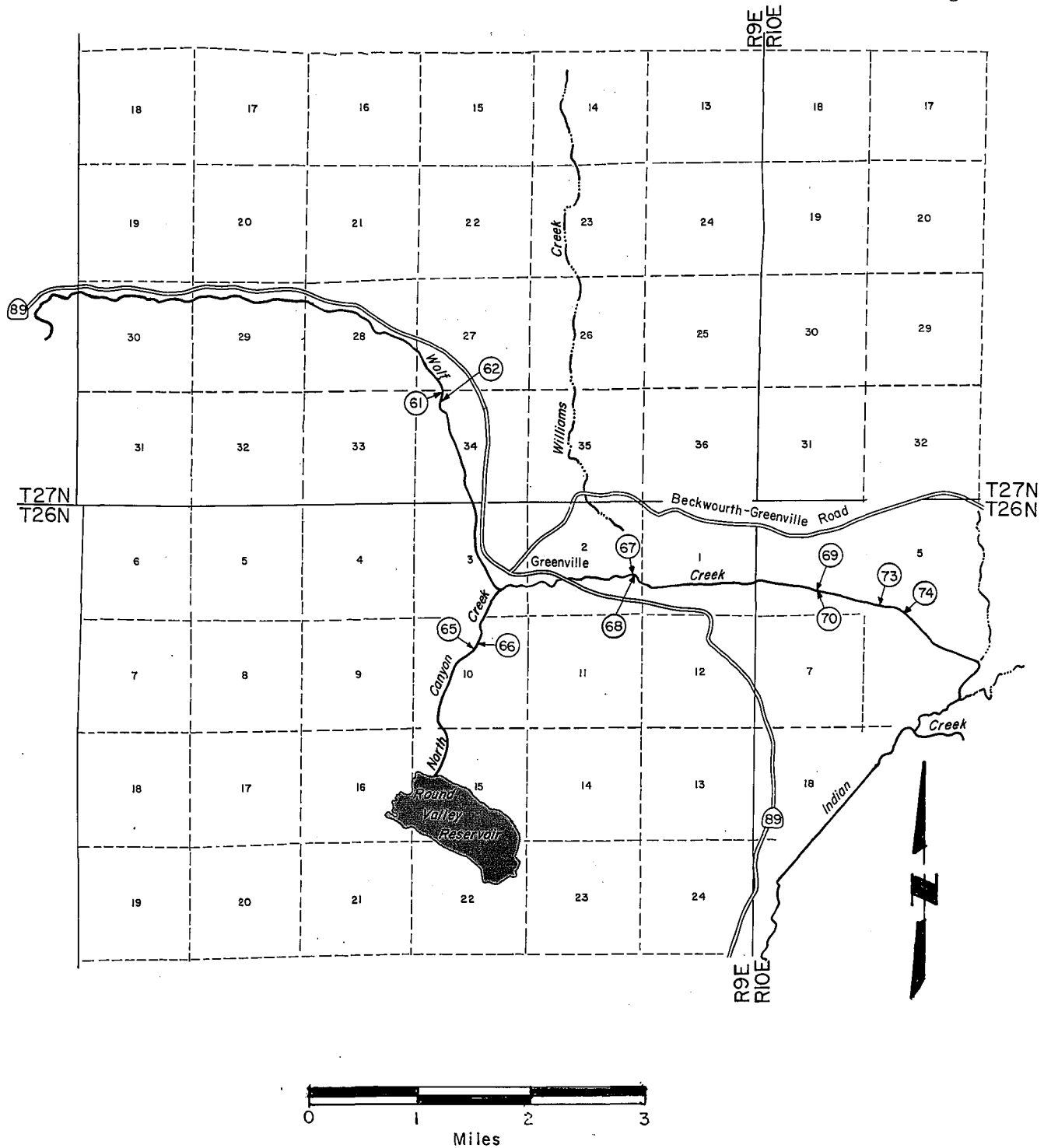


INDEX MAP DIVERSIONS FROM INDIAN CREEK WATERMASTER SERVICE AREA

TABLE 26
DIVERSIONS FROM WOLF CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
61	McMullen	0.10
62	Wattenberg	0.28
	Hollingsworth	0.70
65	Bidwell	0.10
	Jernigan	0.10
66	Embree	0.18
	Rilea	0.07
	Colagross	0.054
	Lanning	0.013
	Santoni	0.183
67	Leiniger	0.70
	Duensing	0.90
	Carr	2.70
	Meyer	0.35
	Foot	0.35
	Thompson	0.805
	Irish	0.143
	Holmes	0.04
	Micheal	0.04
	Hatch	0.022
68	Carr	2.25
69	Sheehan	1.75
70	Kallis, Leal	3.85
73	Foster	1.00
74	Rogers	1.40

Figure 8a

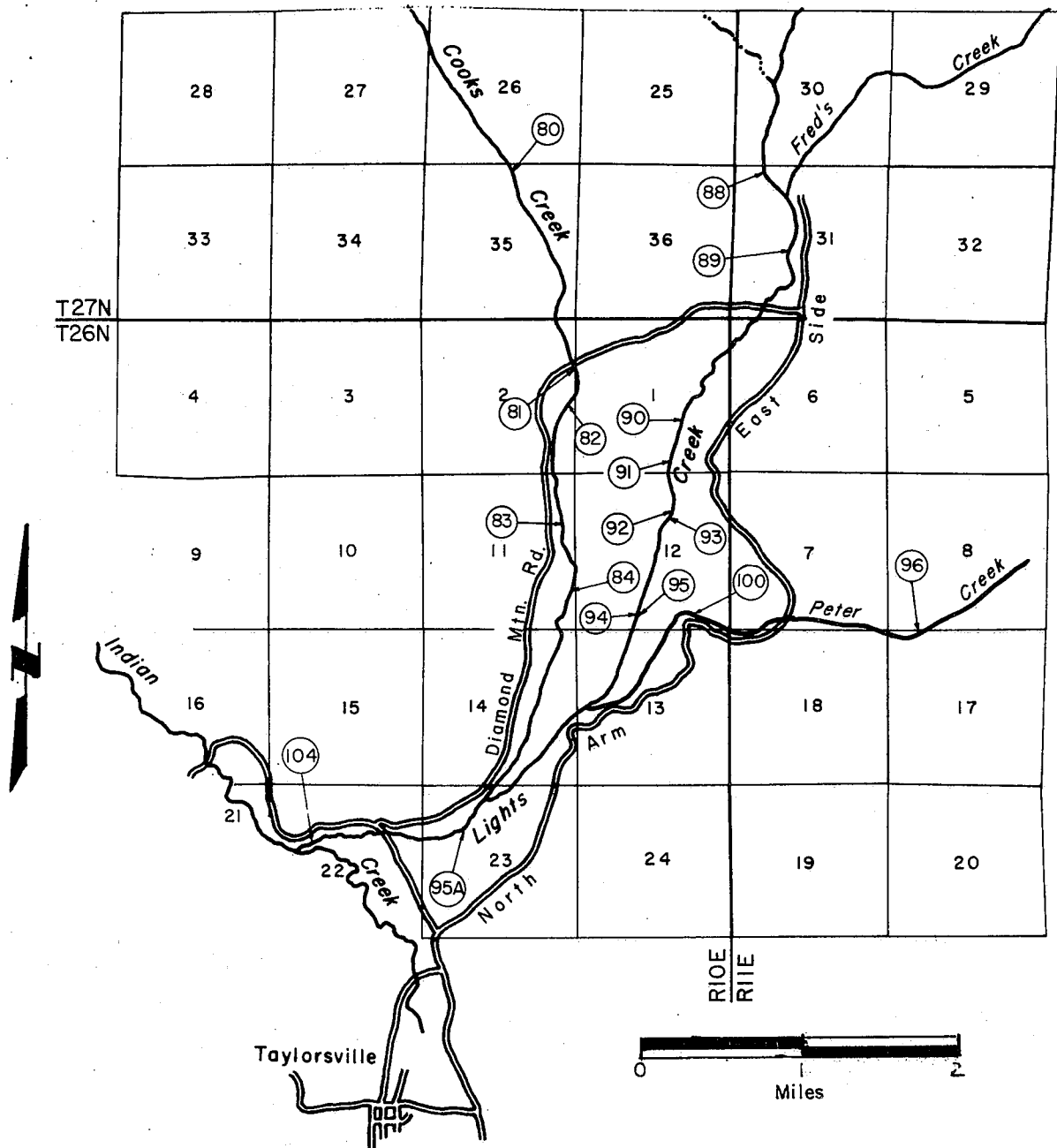


DIVERSIONS FROM WOLF CREEK, INDIAN CREEK WATERMASTER SERVICE AREA

TABLE 27
DIVERSIONS FROM LIGHTS CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
80	Lynch	1.50
81	Metcalf, Leininger, & Foor	1.00
82	Foor	0.45
83	Harlan	0.30
84	Harlan	0.45
88	Harlan	2.90
89	Metcalf, Leininger, & Foor Defanti	0.95 2.85
90	Foor	1.20
91	Harlan	3.10
92	Harlan	1.90
93	Harlan Peter	1.35 0.55
94	Harlan Campbell-Cal Ranch, Inc.	0.85 0.85
95	Harlan	1.175
95a	Carr	0.05
96	Peter	2.00
100	Harlan	0.20
104	Awbrey	0.16
104	Trombly Neer	0.011 0.029

Figure 8b



DIVERSIONS FROM LIGHTS CREEK,
INDIAN CREEK WATERMASTER SERVICE AREA

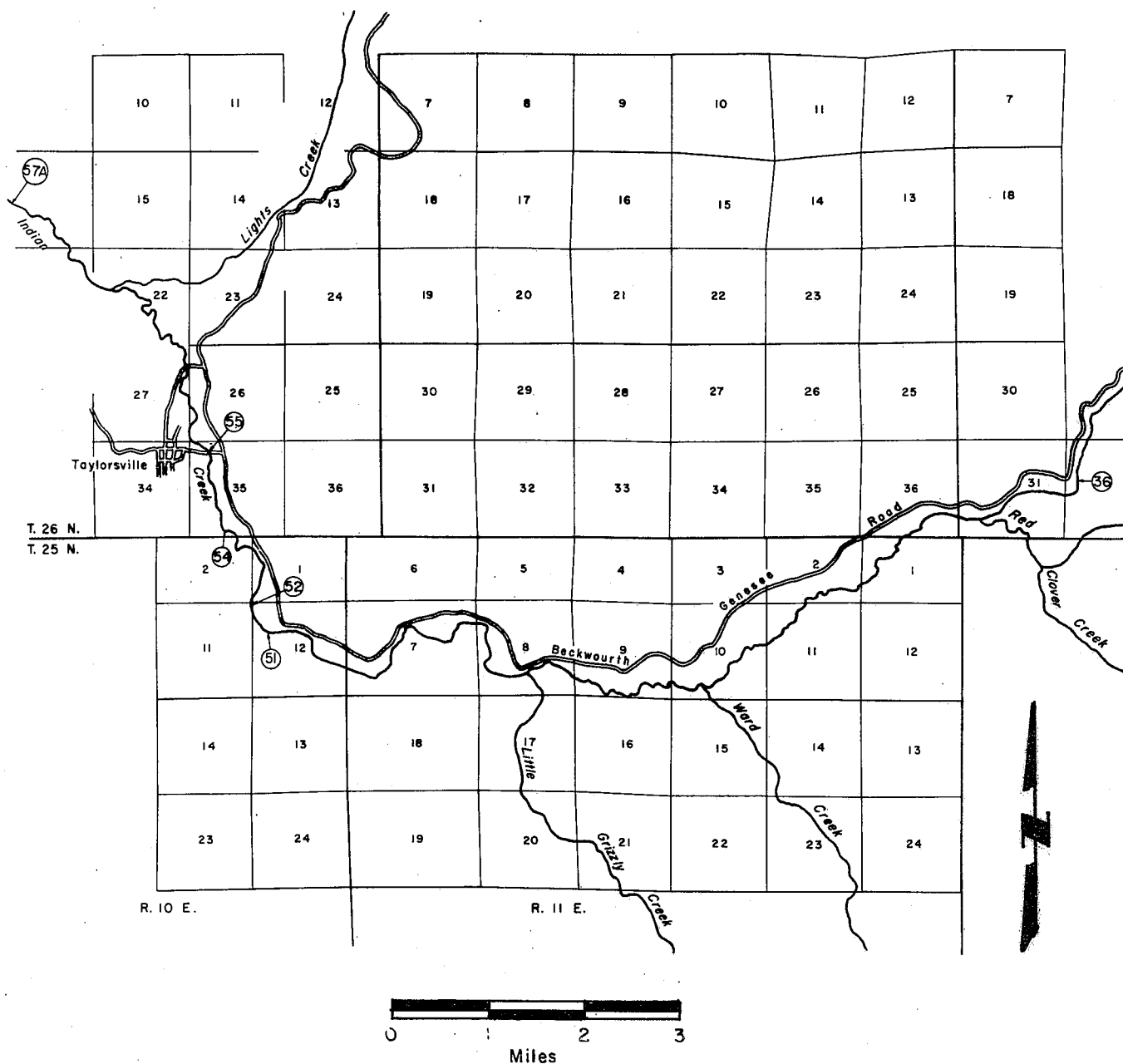
TABLE 28

DIVERSIONS FROM INDIAN CREEK AND UPPER TRIBUTARIES

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
36	Wilbur	5.28
51-52	Page	1.33*
54	Mill Race Ditch	42.30
	Brown	
	Brown	
	Crenshaw et al.	
	Foster	
	Johnson	
	Leininger	
	Matz	
	Neer	
	Pearce	
	Probst	
	Scudder	
	Young	
55	Carr	3.40
57a	Neer	2.50

*Diversion at 51 may also be diverted at 52.

Figure 8c



DIVERSIONS FROM INDIAN CREEK AND UPPER TRIBUTARIES, INDIAN CREEK WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River service area is in Sierra Valley, a plateau on the west slope of the Sierra Nevada in eastern Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area comprises five major stream groups. Starting in the northeast corner of the valley and proceeding in a clockwise direction, these are: Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for about 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Maps of the Middle Fork Feather River service area are presented as Figures 9 through 9h, pages 70 and 74 through 81.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek, eight; Smithneck Creek, five; West Side Canal Group, five; Fletcher Creek and Spring Channels, three; Webber Creek and tributaries, six; and Sierra Valley Water Company, one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 107 water right owners in the service area, with total allotments amounting to 375.639 cfs.

Water Supply

The major water supply in the Middle Fork Feather River service area comes from snowmelt runoff, with minor flow from springs and supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was built by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of a water supply contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about June 1 when only first and second priority allotments are available for the rest of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 60 cfs is diverted from the Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until early of June. The flow then gradually declines throughout the season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. It then gradually declines for the rest of the season. Records of the daily mean discharge of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 30 and 31, page 82 and 83.

Method of Distribution

Wild flooding is used by most ranches to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1984 Distribution

Watermaster service began March 15 in the Middle Fork Feather River service area and continued until September 30, with Conrad Lahr, Water Resources Engineering Associate, as watermaster. The available supply in the service area was above average during the season.

Little Last Chance Creek

Frenchman Dam and Reservoir began its twenty-third season of operation. A five-year contract concerning storage, distribution, and sale of water was negotiated during 1984 with the Last Chance Creek Water District. Delivery and distribution of water was made in accordance with the provisions of the contract and the instruction of the District's Board of Directors.

Smithneck Creek

More than enough water was available in this system to meet demand until the first of June. The regular two-week rotation of water for first and second priorities below Highway 49 was implemented at this time.

Webber Creek

There was sufficient water to supply all allotments (six priorities) until the middle of June. The flow decreased for the rest of the season with enough to supply the first and second priorities. Importation of water from the Little Truckee River began June 10, supplementing the natural flow of Webber Creek to help satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 3,856 acre-feet of water was diverted through the Little Truckee Ditch during the irrigation season.

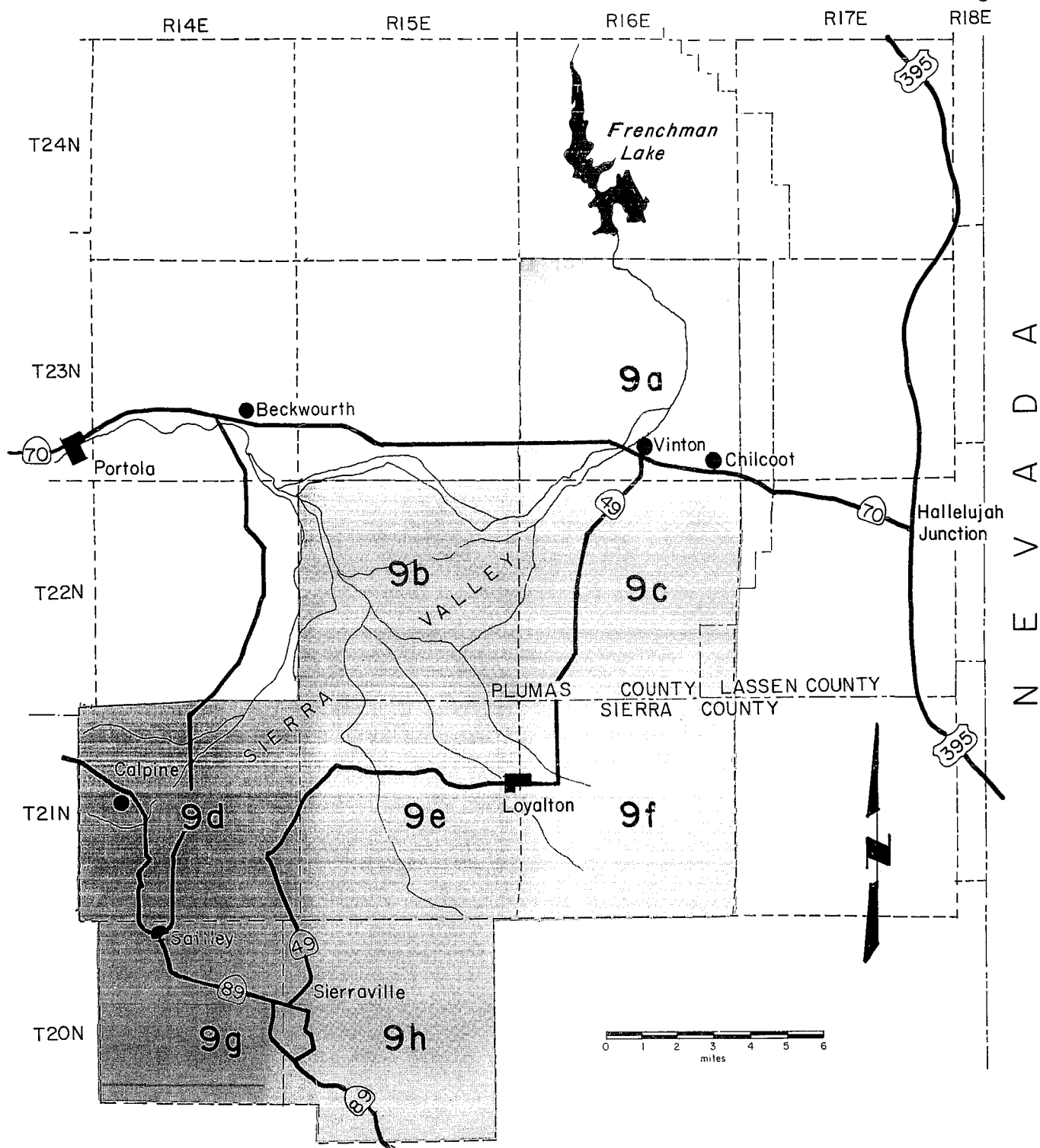
West Side Canal Group

The flow in this system, consisting of Hamlin, Miller and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until the middle of July.

Fletcher Creek and Spring Channels

Ample water was available to satisfy all allotments until about July 1, after which the flow slowly decreased for the rest of the season.

Figure 9



INDEX MAP
MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

TABLE 29

DIVERSIONS FROM MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

<u>Diversion Number</u>	<u>Decreed Owner</u>
21,22,23,73,92,98,99,100,106	Guidici, F. P., et al
23,26,27,28	Golden, E. H.
24,25	Sobrio, G.
28,29,30,31,67,92,108,115,116,119, 225,226,230,231,238,158,159,161,162, 261,229,94,95,96,97	Dotta, F., et al
31,32,57,58,59,60,70,110,113,114,226	Ramelli, E., et al
31,33,34,108,118	Ede, P., et al
35,36,37,57,58	Goble, E. J.
37,38,61,62,63	Scott, D. M.
39,43,44,46,50,51,64,65,66,79,80	Laffranchini, C. D., et al
39,41,41,42,65,66,68,71,72,238	Huntley, J. F.
43,44,45,67,68,69,70	Roberti, J.
47,48,49	Bonta, J. A.
52,53,242	Maddalena, L. D.
56,57,67,70,72,114,118,205,206,207, 208,209,210,214,212,224,219,220,239, 225,226,227,228,229,235,236,234,238, 240,241,242	Humphrey, M. B., et al
70,238	Scolari, et al
77A	Trosi, E. J., and Conradt, D.
77,78,88,89,81,82,83	Clover Valley Lumber Company
82,87	First National Bank of Nevada
86,87,89,253	Rees, J. S.
90,91,110,93,100,101	Dory, M., et al
93,100,101	Keyes, C. V.
90	Grandi, O.

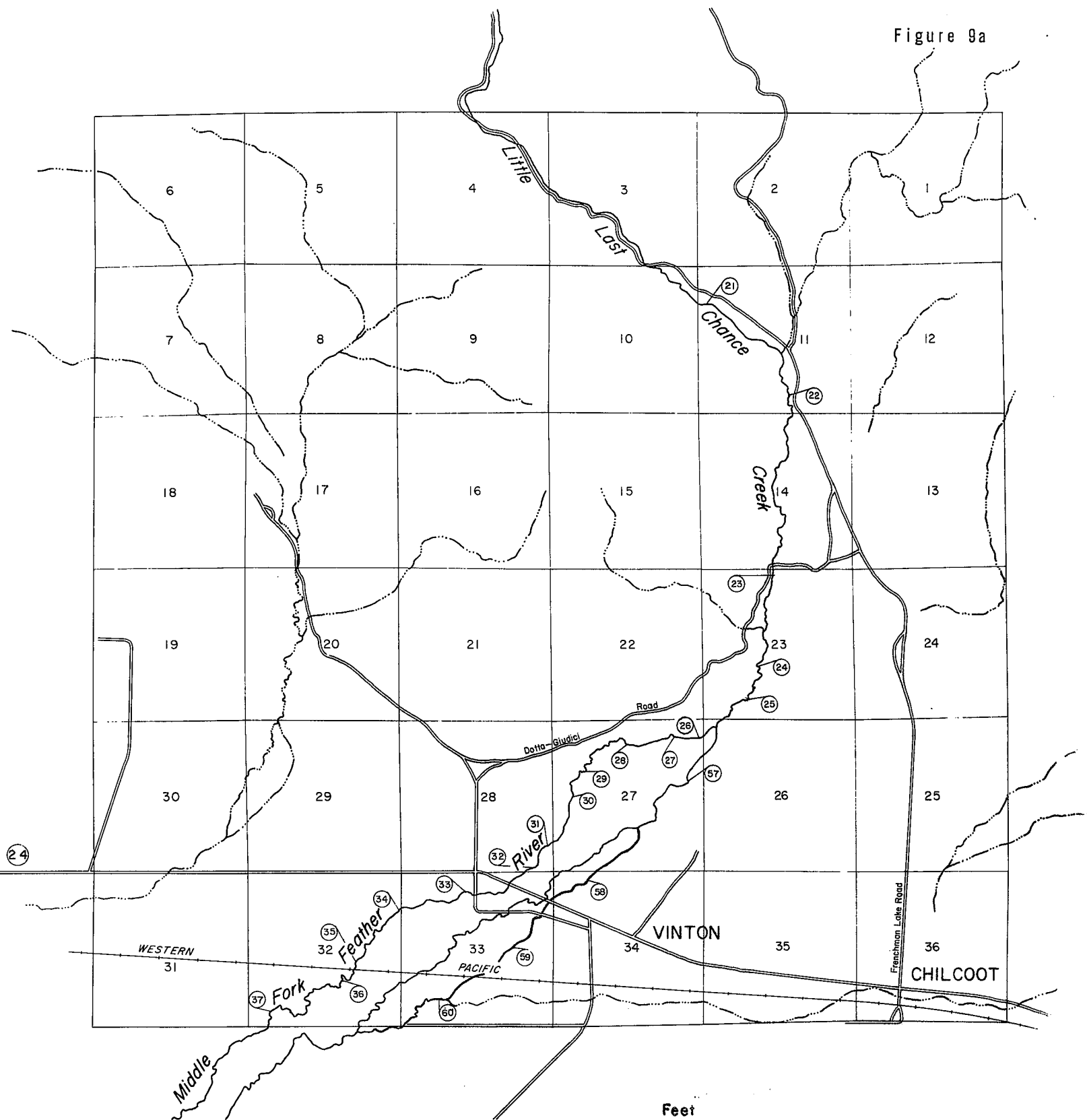
TABLE 29 (Continued)

<u>Diversion Number</u>	<u>Decreed Owner</u>
110,81	Lombardi, L. S.
110	Sierra Valley Bank
102,103,111,112,110,226,229	Genasci, J., et al
114,116,117,108,109	The Federal Land Bank of Berkeley
119,237	Bradley, F. A., Jr.
160, 161	Strang, A. E.
167,168,169,170,171,173,174,177	Martinetti, D. R.
172,177,178	Cavitt, J. H.
174,202	Myers, B. F., et al
174,175,189,195,199,200	Devine, K. L., et al
175,184,186	Church, A. B.
175	Benninger, et al
175,187,202,180,181,182,183,184,185	Turner, et al
176,148,133	Adams, H. G., et al
180,188,194,198	Freeman, F. W.
189,191,202,204,205,176,221	Pasquetti, I., et al
176,203,144,154,222	Henderson, G. A., et al
211,214	Matley, J. B.
213,214,215	Berry, F.
213,216	Ghidossi, E. F.
216,217	Viscia, A. A.
220,239,234	Albini, H.
192,193,196,197	Davies-Johnson Lumber Company
127,134	Linebaugh, S. C.
155	Amodei, J.
133,156,157	Morgan, J. W.

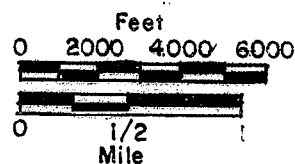
TABLE 29 (Continued)

<u>Diversion Number</u>	<u>Decreed Owner</u>
128,128A,131,132,145,258,133,134	Johnson, D. L., et al
140,256	Alpers, F. P.
129	Dellera, K. N.
142,143,255	Torri, G.
129,258A,133,134,137,146,147,149,152	Miller, A. B., et al
145	Diltz, W. A.
130	Randolph Water Company
134	McIntosh, J. A.
134	Dolley, F.
135	Wilson, G. L.
145	Weber, M. E.
136,137,138,139,147,148A	Bony, F. G.
148,149,150,151	Law, S.
222,223	Vanetti, A.
246	Falchi, G.
226,232,233	Filippini, J.
246,247	Carmichael, C. R.
238,243,244,245,263,54,55	Westover, L. H., et al

Figure 9a

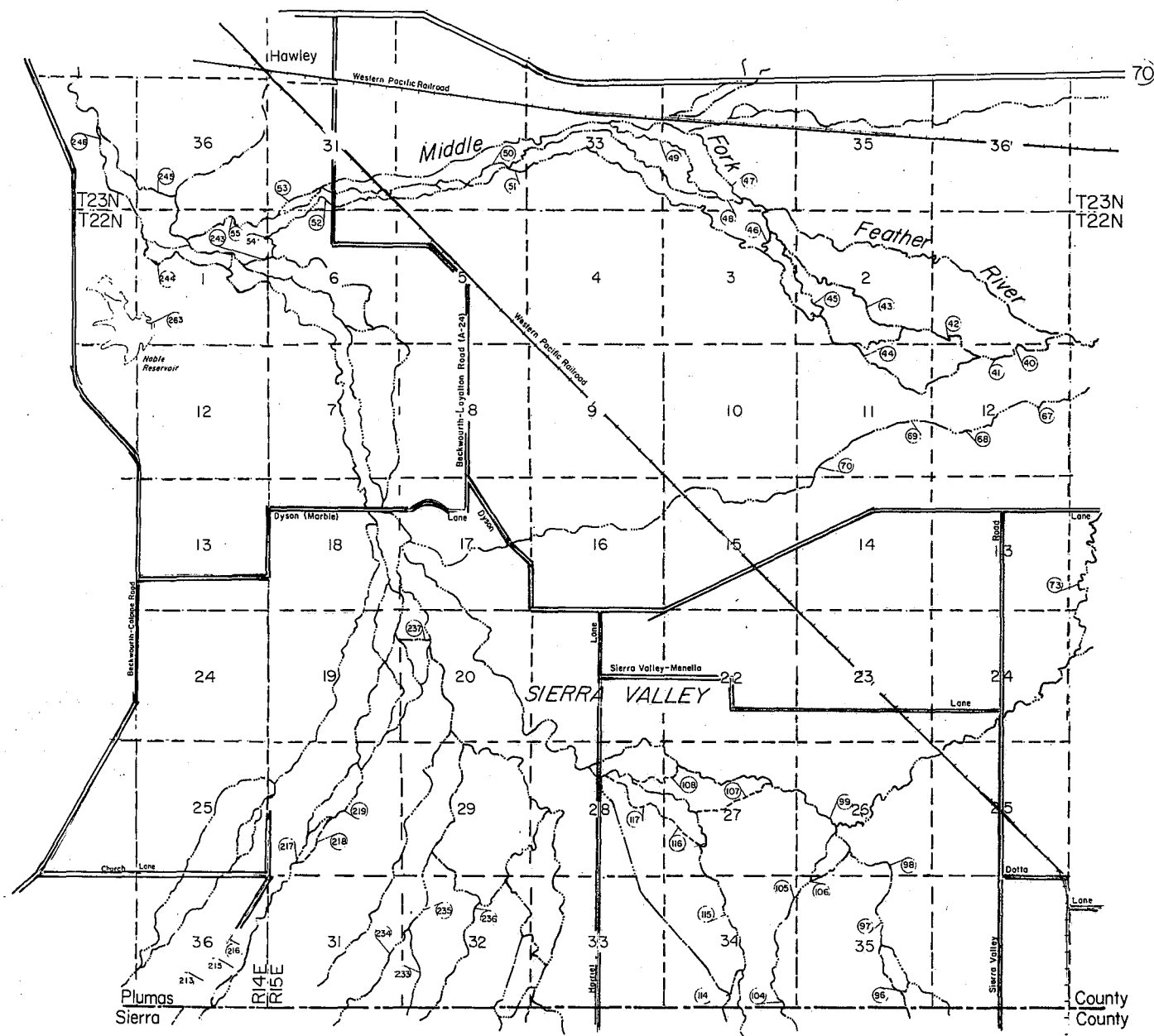


T23N., R16E., M.D.B. & M.

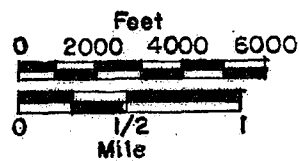


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9b

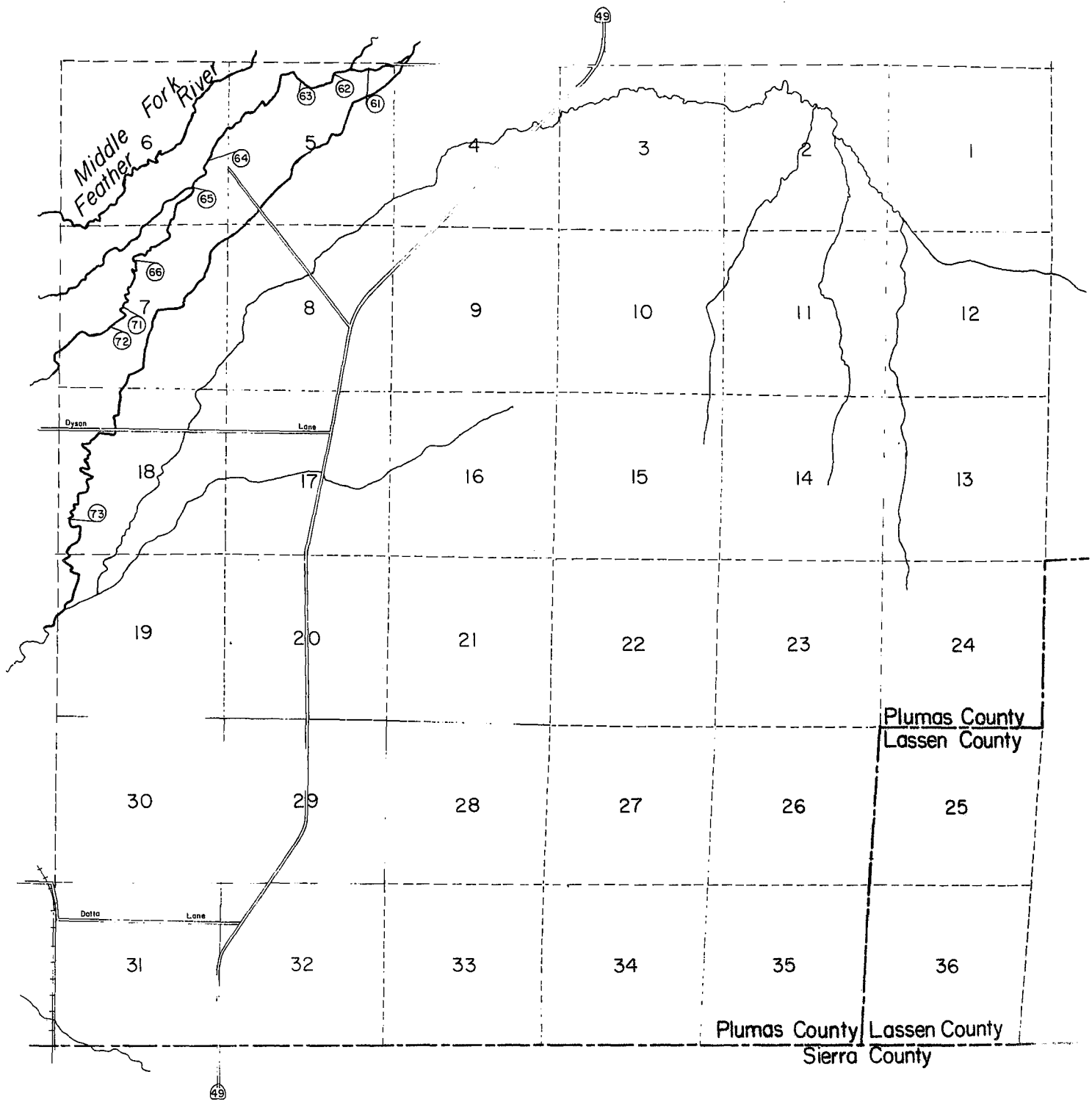


T22N. and T23N., R14E. and R15E., MDB & M

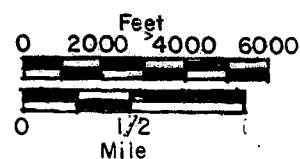


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9c

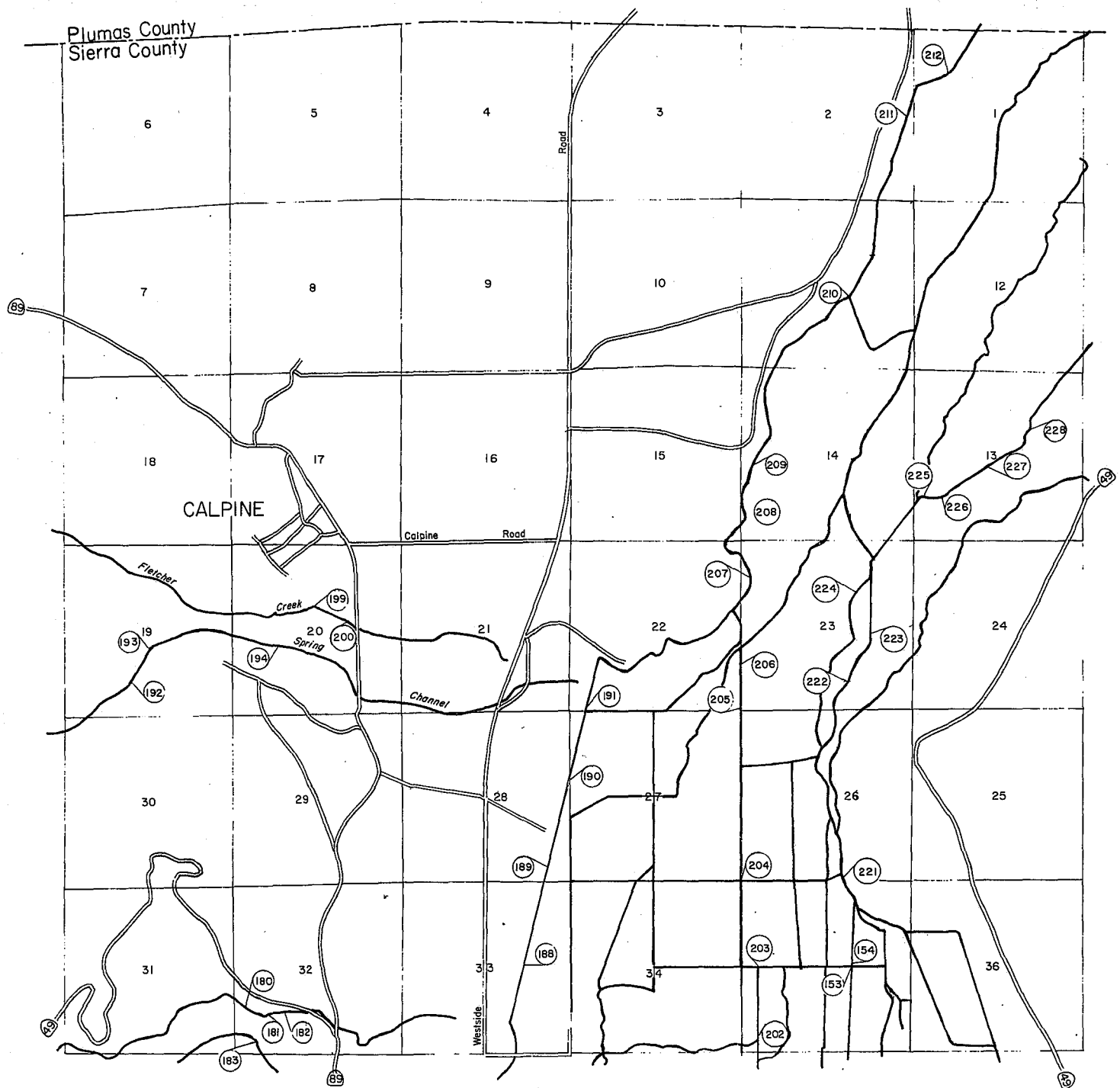


T22N, R16E, M.D.B. & M.

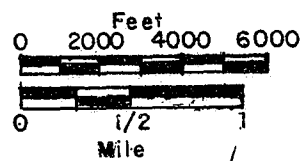


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9d

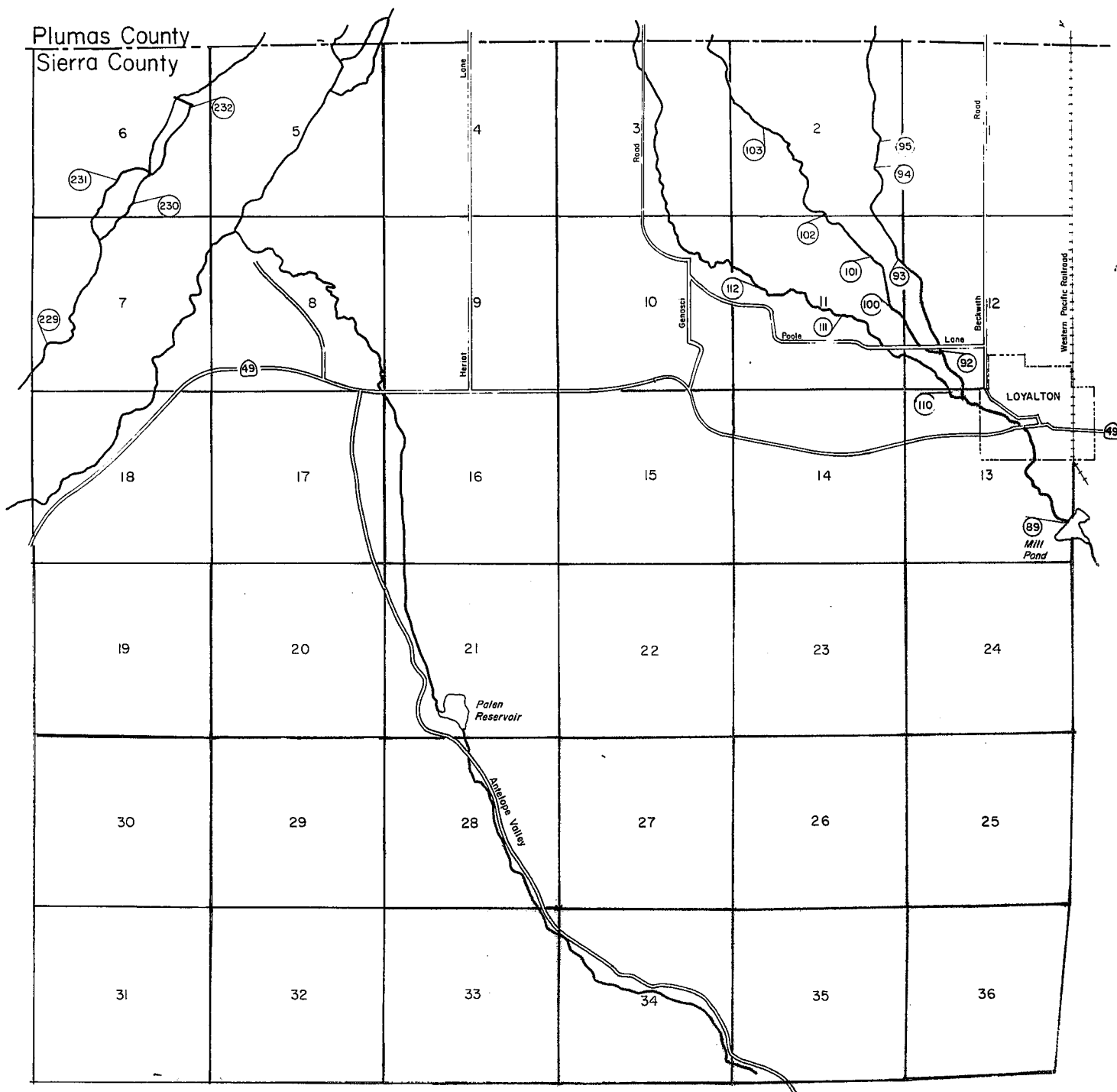


T21N.,R14E.,M.D.B.&M.

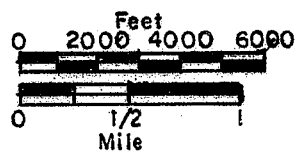


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9e

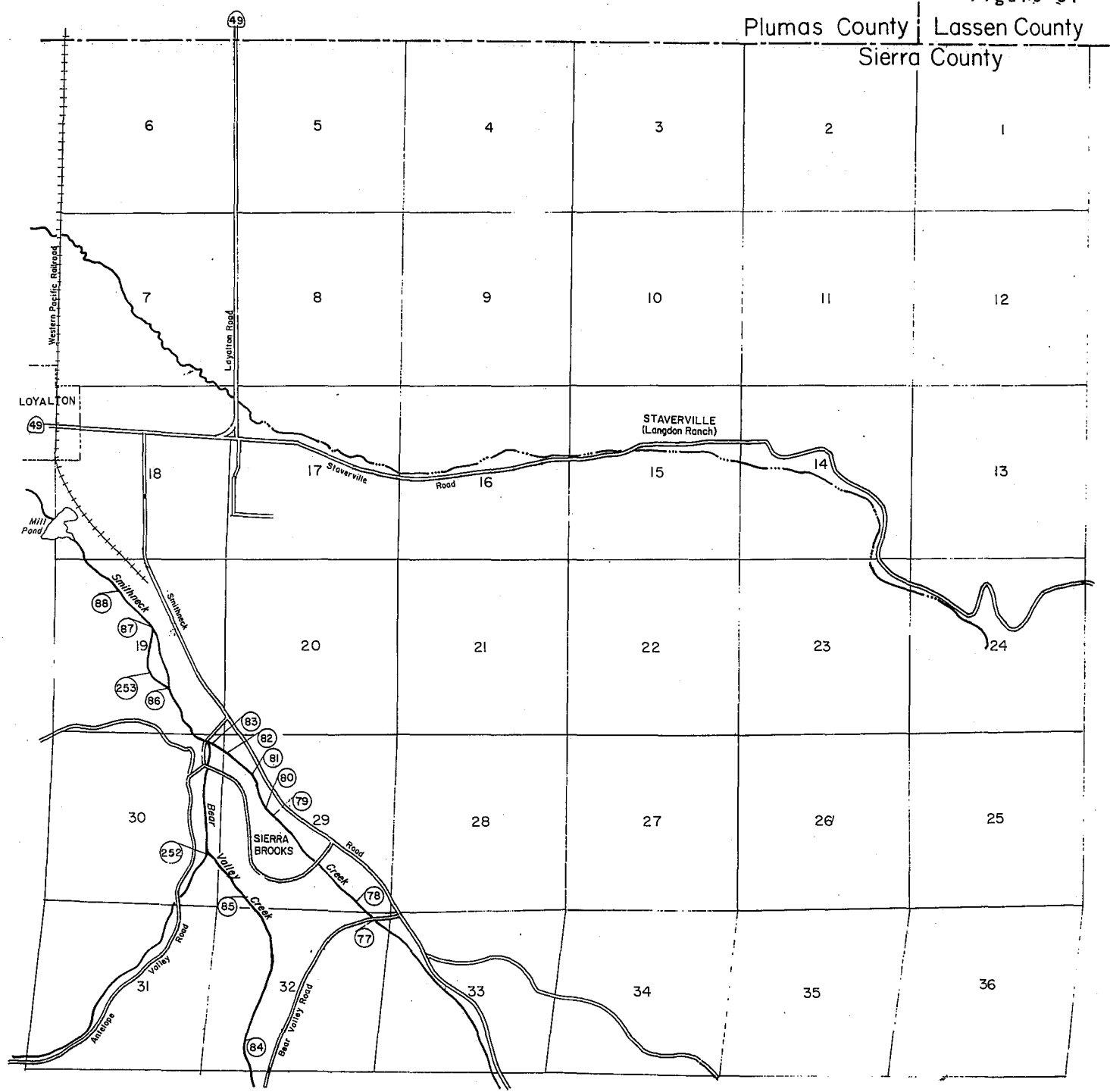


T21N.,R15E.,M.D.B.&M.

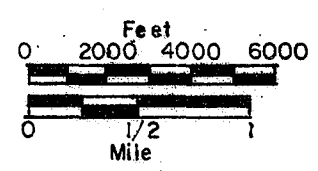


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9f

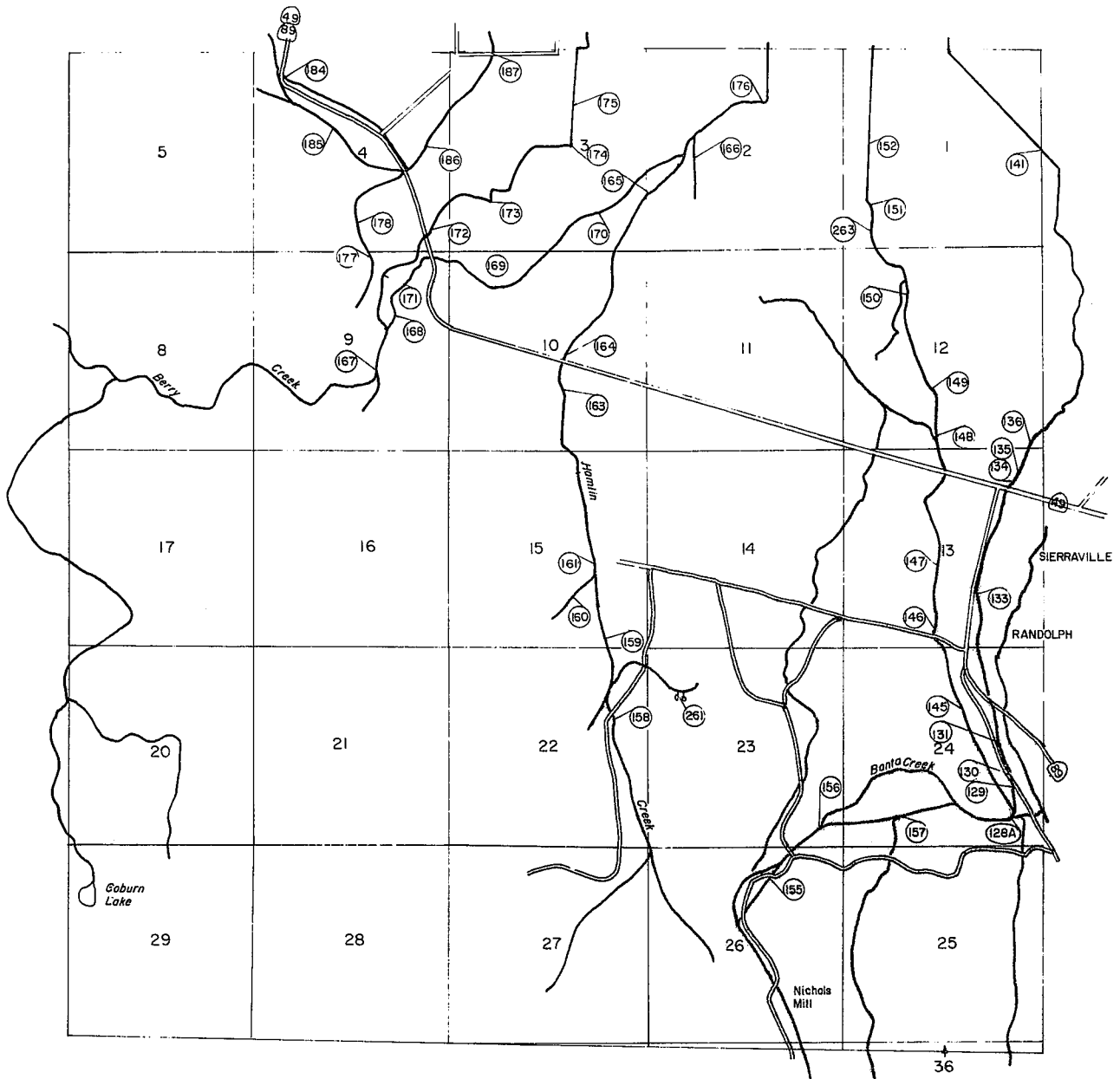


T21N., R16E., M.D.B. & M.

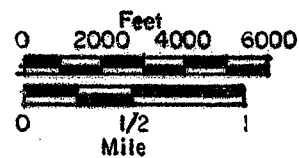


MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9g

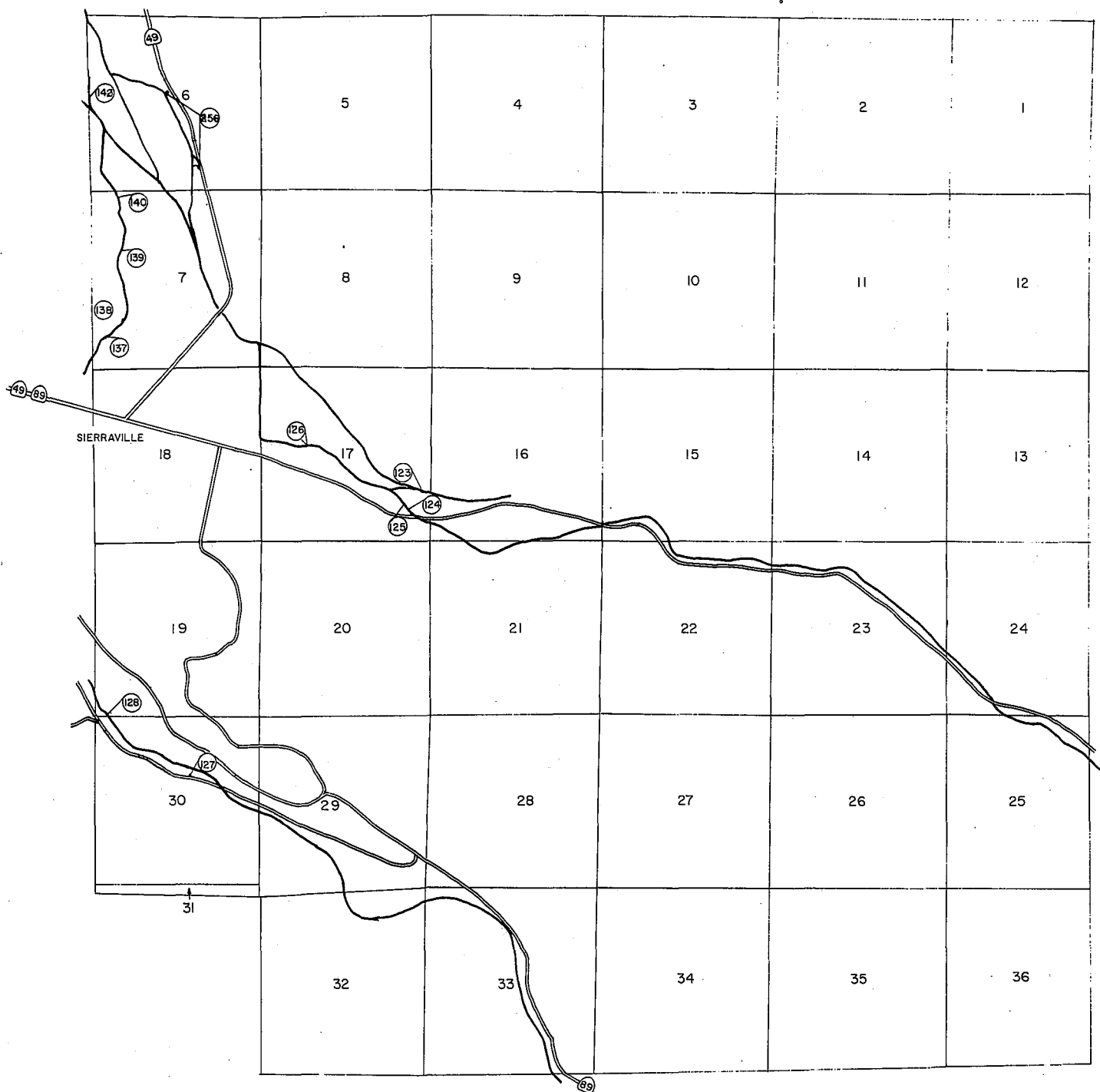


T20N.,R14E.,M.D.B.&M.



MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

Figure 9h



T20N., R15E., MD.B. & M.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 30

1984 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1					40	14	5.1
2					40	13	4.4
3					53	13	4.2
4					60	12	3.9
5					60	11	4.9
6					60	11	4.9
7					60	9.8	4.2
8					55	9.5	3.9
9					46	8.6	3.7
10					39	8.9	3.4
11				9.4	41	8.9	3.4
12				12	47	8.2	3.2
13				16	44	7.9	3.2
14				4.9	42	7.6	3.2
15				14	40	7.6	3.2
16				23	38	7.6	3.0
17				24	44	6.7	3.0
18				24	44	5.4	3.2
19				23	37	5.1	3.9
20				22	32	4.9	4.2
21				21	29	4.6	4.2
22				19	26	4.6	3.9
23				20	31	4.6	3.7
24				20	36	4.4	2.8
25				22	28	4.6	2.1
26				24	24	4.6	1.9
27				23	21	4.4	1.9
28				22	19	4.2	1.9
29				34	17	4.2	1.9
30				41	16	4.9	1.9
31					15	6.5	
MEAN				21	38	7.5	3.4
AC-FT				845	2346	461	203

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 31

1984 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	376	487	239	96	80	49	24
2	373	478	230	97	68	49	25
3	362	454	225	96	60	46	24
4	362	430	216	90	57	45	26
5	358	422	208	96	56	46	27
6	340	422	203	103	54	45	28
7	327	414	203	108	52	36	28
8	317	406	195	118	49	29	26
9	310	418	178	120	48	28	24
10	307	458	156	122	47	28	24
11	303	478	134	126	46	28	24
12	307	470	94	126	45	28	24
13	340	418	70	122	40	28	24
14	462	323	108	124	39	25	24
15	692	303	130	128	39	24	23
16	1087	287	134	126	41	23	24
17	1073	284	143	118	41	25	24
18	997	287	166	108	46	25	24
19	918	340	161	101	48	26	25
20	826	395	156	90	48	25	28
21	760	450	152	85	48	24	31
22	712	355	143	80	49	25	30
23	688	334	141	76	54	26	34
24	667	310	147	73	58	28	35
25	657	278	141	71	56	31	33
26	632	268	138	70	53	32	32
27	647	265	126	70	52	31	32
28	642	262	118	62	52	30	33
29	627	259	114	57	51	30	34
30	618	256	101	70	51	29	36
31	530		89		51	24	
MEAN	567	367	153	97	52	31	28
AC-FT	34904	21840	9439	5810	3132	1920	1646

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

The North Fork Cottonwood Creek service area is in Shasta County near the town of Ono, west of Redding. Figure 10, page 86, shows the North Fork Cottonwood Creek stream system including the diversions and roads.

The source of water for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. The North Fork of Cottonwood Creek flows through the service area in a southeasterly direction to where it joins the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels, some in hilly terrain and some in the valleys.

Basis of Service

The water rights of this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929, although service had been provided intermittently in accordance with the decree since 1924. All water rights are of equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season, and perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands except in dry years, when the available supply may be as low as 20 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 32, page 87. This gaging station is downstream from most diversion points on the creek but gives a general indication of the water supply.

Method of Distribution

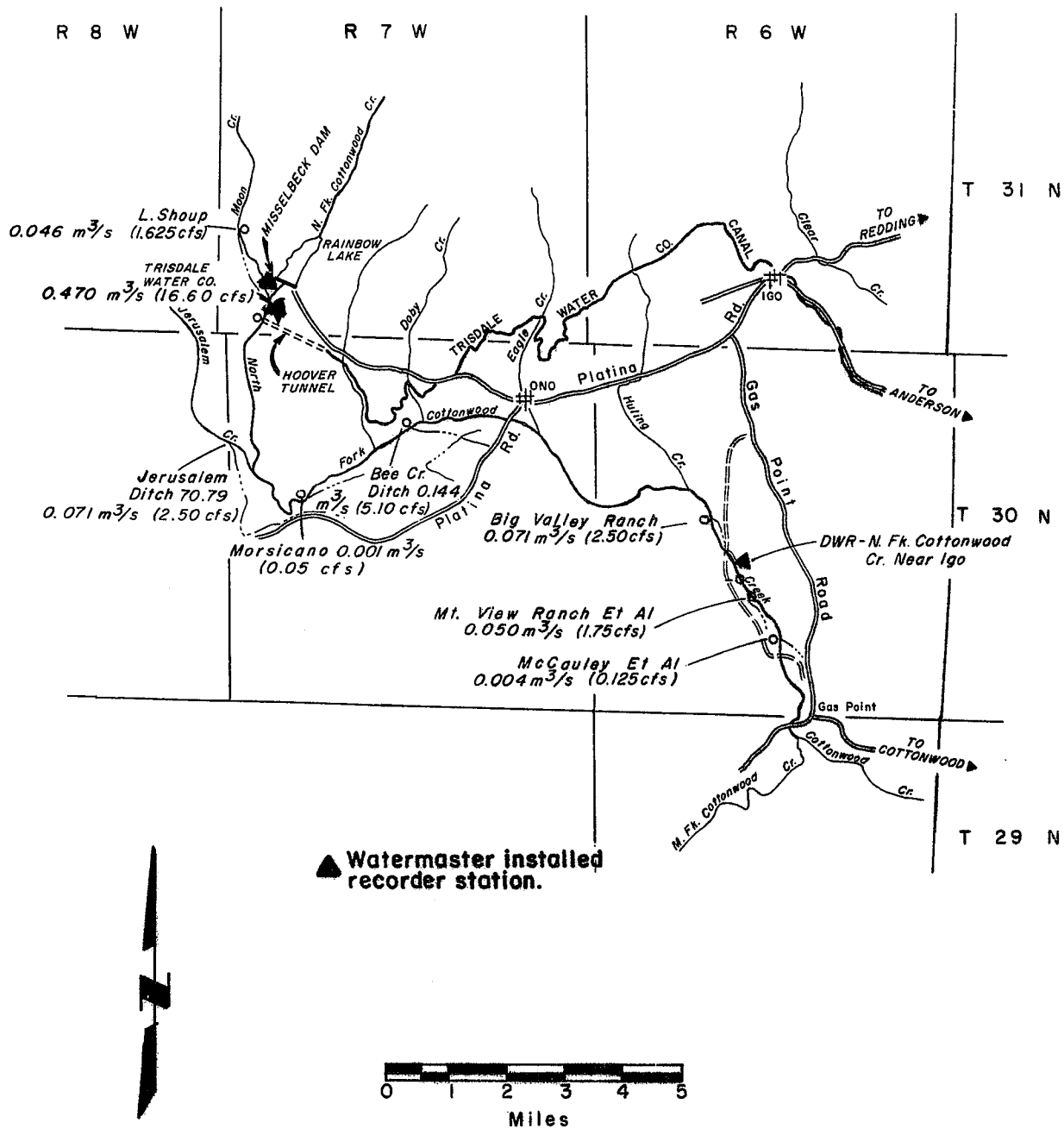
The general practice throughout the area is to irrigate by wild flooding. One water user pumps directly from the creek, using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was considerably higher than the creek channel.

1984 Distribution

Watermaster service for North Fork Cottonwood Creek began June 1 and continued through September 30. Kenneth E. Morgan, Water Resources Engineering Associate, was watermaster.

Streamflow was sufficient to meet all water right allotments throughout the irrigation season with some surplus below the lowest user.

Figure 10



DIVERSIONS FROM NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

TABLE 32

1984 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK NORTH FORK NEAR IGO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	144	146	104	22	27	10	12
2	143	137	101	21	27	8.8	12
3	139	134	95	21	27	8.8	11
4	136	133	90	22	27	8.8	8.8
5	132	124	87	25	24	8.2	8.2
6	130	115	86	42	20	8.8	8.2
7	127	111	83	33	11	8.8	8.2
8	124	115	77	26	11	10	8.8
9	122	113	70	25	11	12	7.0
10	122	138	67	26	12	8.2	5.9
11	121	116	67	25	13	8.2	8.2
12	121	112	66	26	13	8.8	8.2
13	266	109	57	26	13	8.2	5.9
14	191	105	53	25	13	8.2	8.8
15	242	102	51	26	13	8.2	7.0
16	326	100	49	26	13	8.2	8.8
17	304	99	48	27	13	7.0	8.2
18	251	215	46	27	13	7.0	8.2
19	227	136	43	27	13	5.9	15
20	214	116	42	27	12	5.9	27
21	199	112	40	27	10	5.9	33
22	188	108	38	27	8.8	5.9	24
23	181	102	37	27	11	5.9	21
24	173	99	31	27	12	5.9	20
25	168	99	31	27	12	5.9	19
26	162	99	31	27	13	5.9	20
27	154	96	29	27	13	5.9	24
28	147	91	27	27	12	15	24
29	144	89	26	27	11	8.2	20
30	142	91	25	27	11	8.8	20
31	152		24		11	13	
MEAN	174	115	55.5	26.5	14.5	8.2	14.0
AC-FT	10690	6870	3410	1580	890	500	830

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border about 45 miles to just south of Alturas.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River west of Alturas. The basins of Goose Lake and the North Fork Pit River may be considered completely separate since the lake has not spilled into the river for nearly 100 years.

Nine small independent streams draining the west slope of the Warner Mountains and generally following a westerly direction constitute the major source of water. Three of these (New Pine, Cottonwood, and Davis Creeks) are tributary to Goose Lake. Five are tributary to the North Fork Pit River. From north to south, they are: Linville, Franklin, Joseph, Thoms, and Parker Creeks. The other one is Pine Creek near Alturas.

The place of use in the northern half of the area is a relatively long, narrow, sloping strip extending between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Maps of the North Fork Pit River watermaster service area and of the separate stream systems within the area are presented as Figures 11 through 11j, pages 93 through 113.

Basis of Service

Table 33, page 92, briefly outlines the five decrees covering the area and presents data on the establishment of watermaster service and water rights.

The Pine Creek agreement established water rights on Pine Creek November 22, 1933, and this stream was added to the South Fork Pit River area on January 22, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. Now a recreation site, it has a small water right but is not in the service area and was added to North Fork Pit River area on July 1, 1982. The Pine Creek agreement establish two priorities.

Water Supply

The water supply comes mainly from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small

drainage area, is almost entirely spring-fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially for regulatory storage.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches that convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches, with supplemental ground water being added as the surface flow diminishes. Subirrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1984 Distribution

Watermaster service in the North Fork Pit River service area began April 1 and continued through September 30. Charles Hodge, Water Resources Technician II, was watermaster during this period, however, Keith Dick, Water Resources Technician II, was watermaster on Pine Creek.

The 1984 irrigation season was considered better than normal, there was a very good snow pack and a late cold spring.

New Pine Creek

There was excess water to all the users from April 14 through July 25. On July 1, when the schedule changes from proration (or correlative rights) to the priority system, the flow was sufficient to supply all fourth priorities until July 23. On August 10, only third priorities could be filled. At the end of the season, only 88 percent of second priorities was available.

Cottonwood Creek

The flow was adequate to supply all six priorities to June 22. On July 16 only first priorities were filled. From August 7 until the end of the season, only stockwater was available.

Davis Creek

There was surplus flow in Davis Creek from May 9 through June 22. Then the flow receded continually and by the end of the season was only 6.4 cfs. On September 30, only 61 percent of first priority was available.

Linville Creek

The flow in Linville Creek is spring fed with very little fluctuation. Full second priorities could not be filled. Peak daily mean flow was 4.9 cfs and minimum daily mean flow was 2.4 cfs.

Franklin Creek

The flow was sufficient to fill all priorities May 3 through June 12. On August 1, only 27 percent of third priorities could be met. On September 15, when the winter schedule starts, the flow was 3.5 cfs.

Joseph Creek

Streamflow exceeded all allotments April 1 through July 9. From August 6 to end of season, only a part of first priorities could be met.

Thoms Creek

Streamflow exceeded all allotments from April 1 through July 4. The flow then rapidly decreased until August 24, when only first priorities could be filled. On September 30 the streamflow was 0.9 cfs.

North Fork Pit River

A surplus water supply was available April 1 through June 14. On July 4 only first and second priorities were met. On August 1 the flow was 2.6 cfs, and on September 30, 2.0 cfs.

Parker Creek

There was surplus water April 1 through July 22, but a steady drop in flow for the rest of the season. On September 30 there was 2.8 cfs.

Shields Creek

Surplus water was available to July 25. A steady decrease in flow followed the rest of the season. On September 30, flow was 3.6 cfs.

Pine Creek

Total stream runoff available April 1 through September 30 was 15,770 acre-feet. From the middle of May to after the first of July, there was excess water in the stream.

TABLE 33

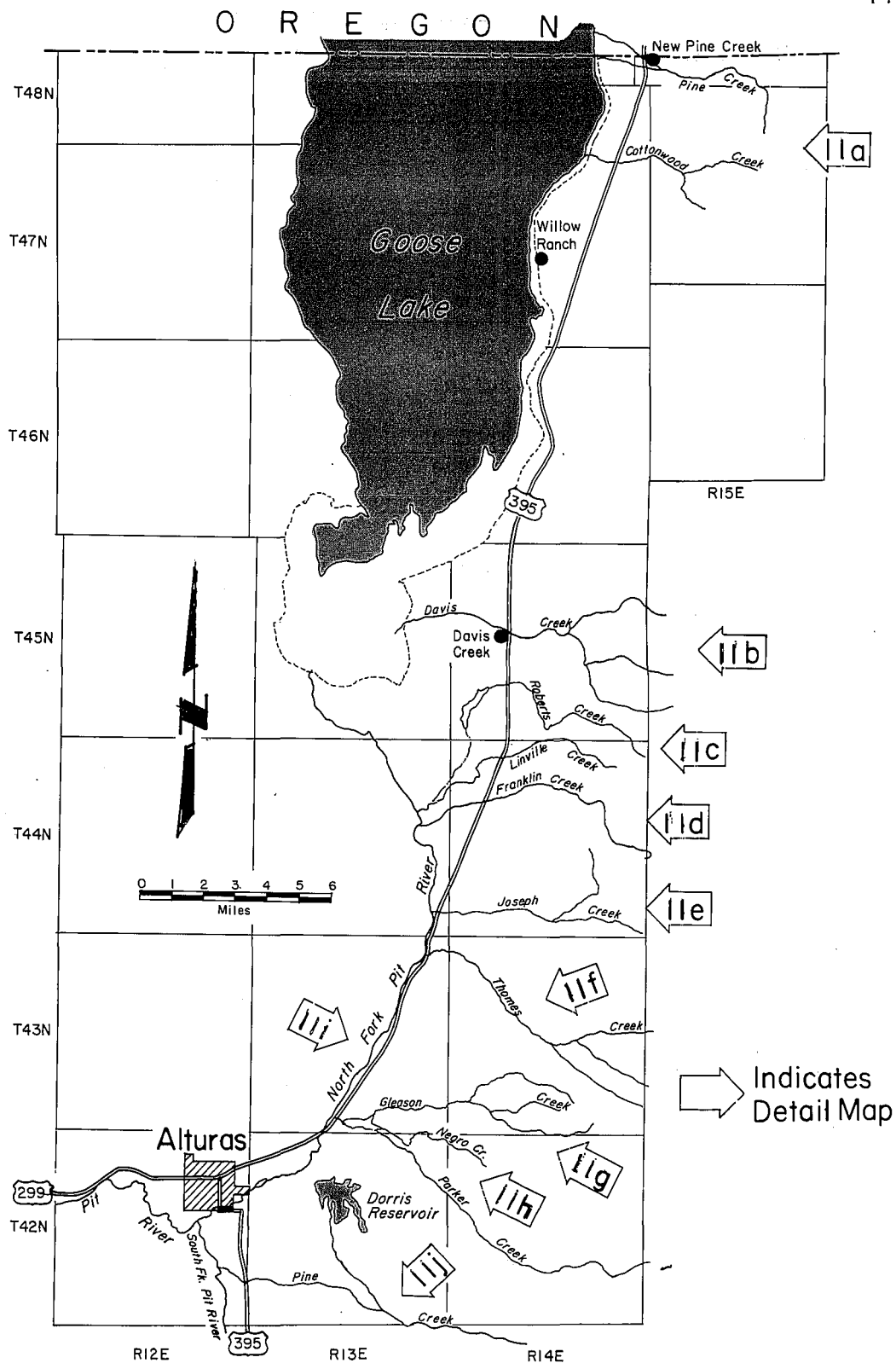
DECREES AND RELATED DATA - NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Stream	Modoc County Superior Court Decree			Service Area Created	No. of Water Right Owners	Total cfs	Remarks
	No.	Date	Type ^{a/}				
New Pine Creek	2821	6-14-32	CR	6-22-32	21	22.18	
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion Creek No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4
Davis Creek	2782	6-30-32	CR	7-13-32	19	52.70	four priorities, 4-1 to 9-15. Some rights vary according to flow available. Most first & second priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2b/		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin Creek	3118	9-08-33	CR	9-14-33	4	11.66	four priorities. The first priority and all second priority rights are year-round, except one which is equal to all the others--1.46 cfs-- and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-34	S	12-18-39	10	51.73	five priorities, 4-1 to 9-30. Pit River Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. fourth and fifth priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	two priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	four priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	7	18.07	four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	5	7.50	four priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44	three priorities, 4-1 to 9-30.
						9.40	5.0 cfs export to Cedar Creek; and 4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.45	five priorities.
Pine		11-22-33		1-22-35	16	60.00	Surplus flow diverted into Doris Reservoir.

a/ S-Statutory, CR-Court Reference.

b/ Appropriative rights, junior to the decreed rights.

Figure 11

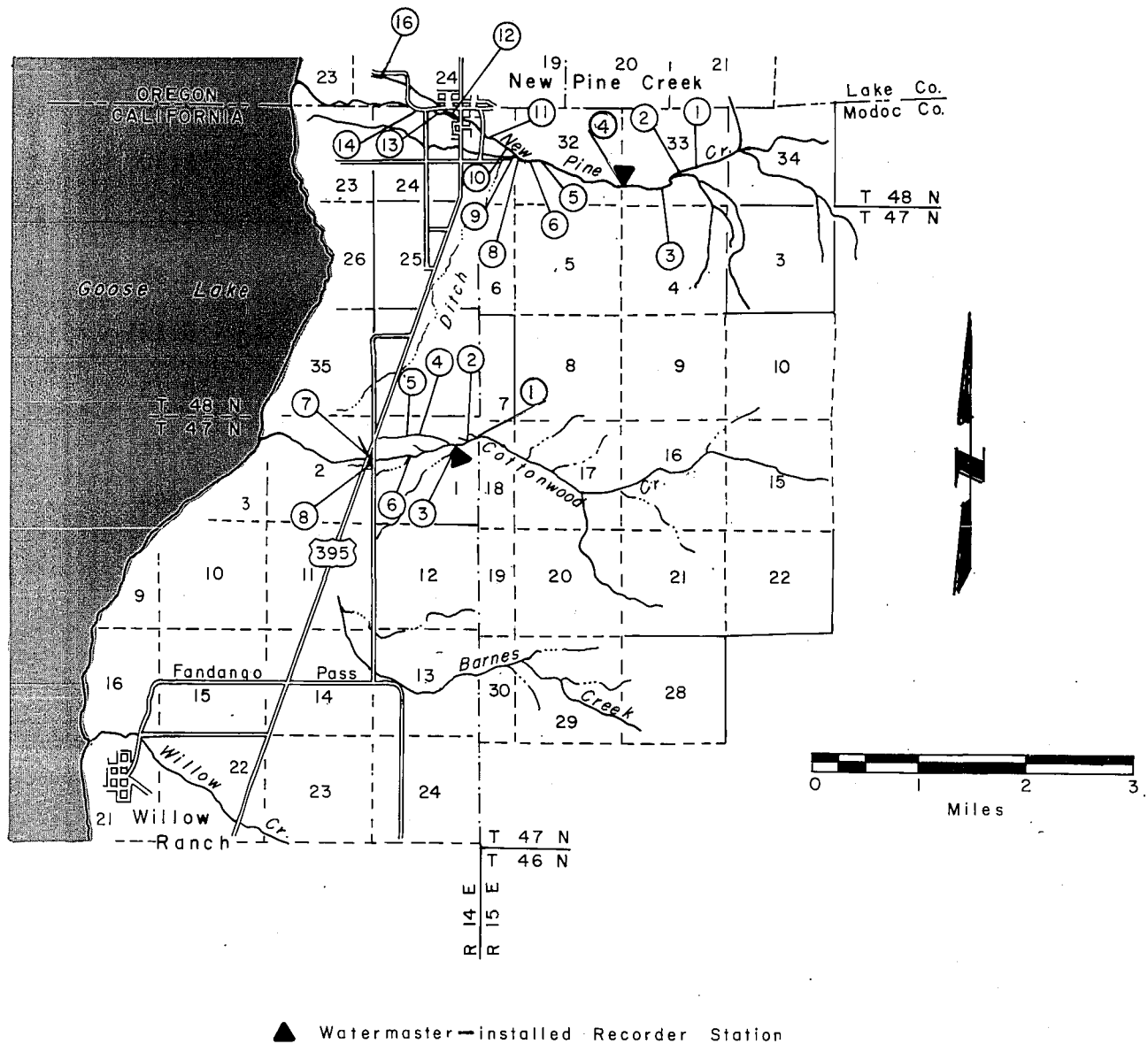


INDEX MAP NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA

TABLE 34
DIVERSIONS FROM NEW PINE CREEK AND COTTONWOOD CREEK

<u>New Pine Creek</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,2,3	Clemons	0.23
4	Fernwood	0.18
5,8,9	Butler	0.65
	Butler	0.51
6	Brocco	0.02
	Guerne	0.03
	Stevens	0.33
	Beachler	0.15
8	California Ditch	
	Nelson	0.70
	Stringer	1.39
	Cunduff	0.57
	Withrow	0.33
	Cundiff	0.66
	Pochop	0.30
	Cole	0.08
	Cloud	0.62
	Vincent	0.55
	Lawson	1.04
9,10	Beachler	0.97
11	Bontin	0.02
12	Johnston	0.02
13	Lawson	8.48
14,16	Lawson	3.89
<u>Cottonwood Creek</u>		
1,2	Larkin and Van Volkinburg	1.60
3	Fleming and Noble	4.60
3	Perry	2.30
4,7,8	Weidner	4.10
5	Fleming and Noble	1.15
6	Panter	1.60

Figure 11a

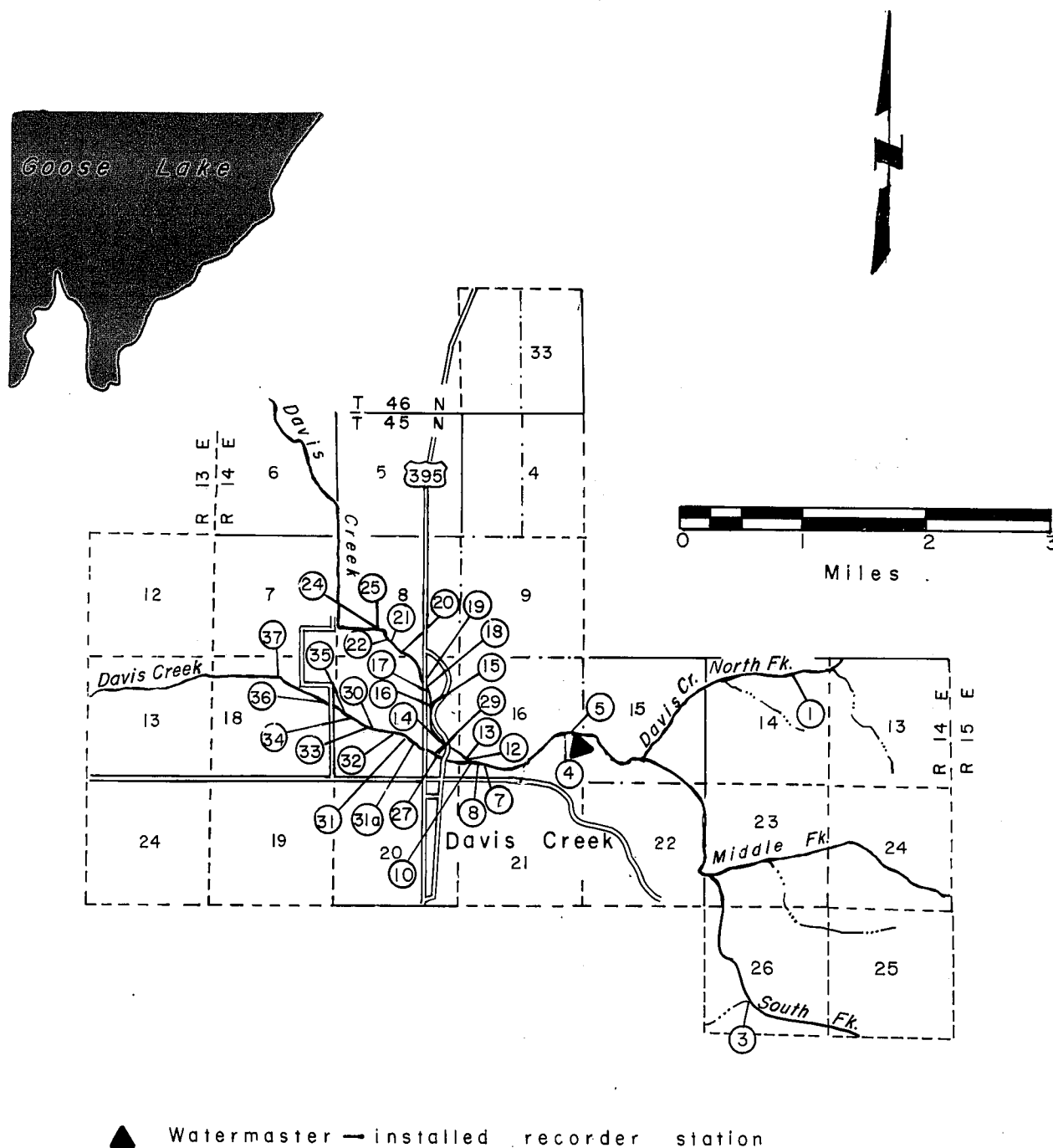


DIVERSIONS FROM COTTONWOOD AND NEW PINE CREEKS, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 35
DIVERSIONS FROM DAVIS CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Pangborn	0.40
3	Gardner	0.40
4,5	Baker	1.15
4,8	Eddie	0.95
5	Mann	0.125
5,14	Eagleston	0.15
7	James	0.11
7	Shedd	0.04
7	McMasters	0.06
7	Ramsey	0.09
8	Pointere	0.04
8	Grivel	0.06
8	Brunnemer	0.15
8	Agnew	0.15
10	Reith	0.20
5,12,13, 16,30,31	Tilson	1.40
5,16,19 20,22,24	Goose Lake Land and Cattle Company	5.55
5,15, 17,19	Ingraham	1.50
21	Foothill Plumbing	0.65
1,27,29 32-37	Triple S Land and Cattle Company	39.45

Figure 11b

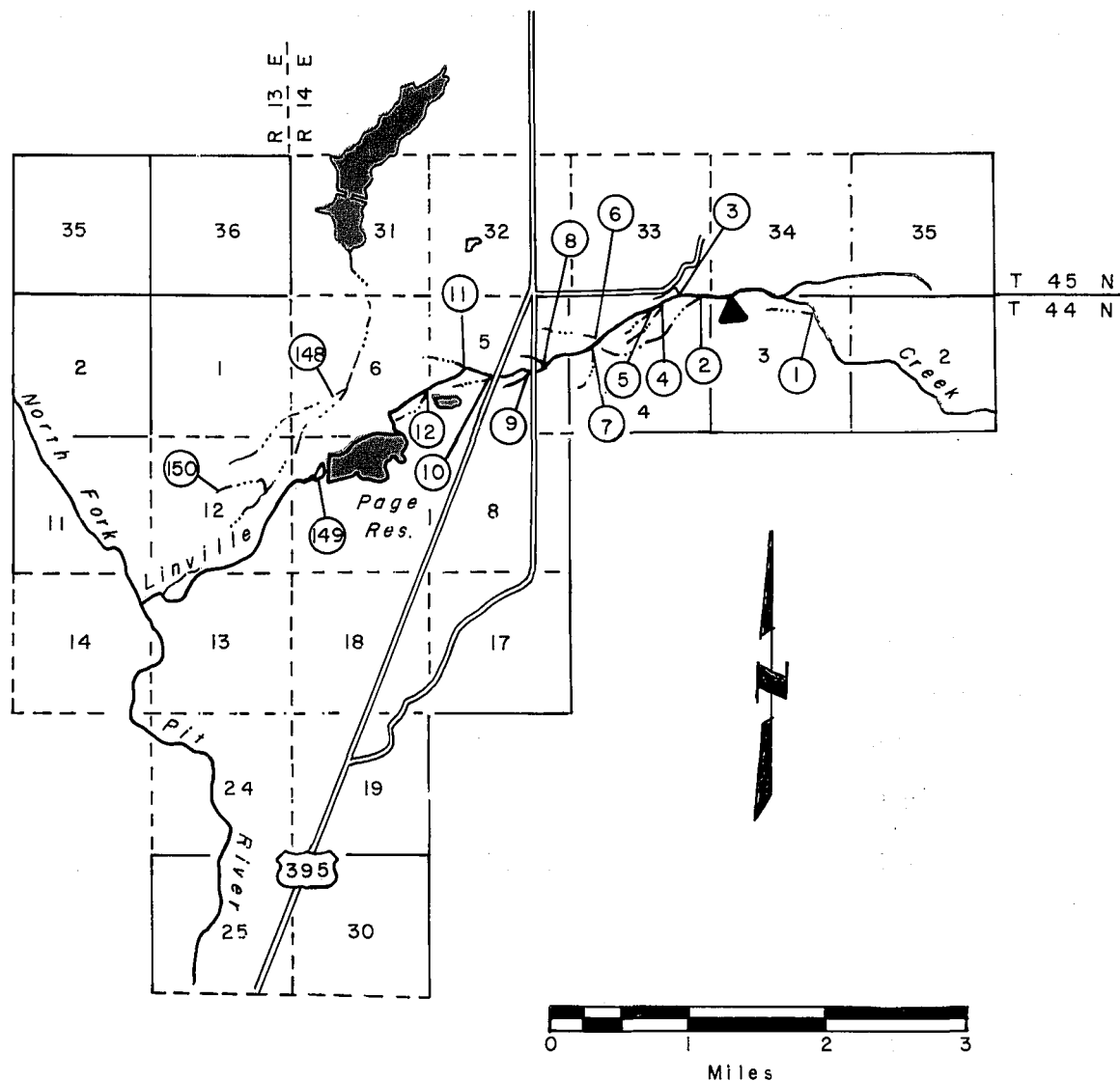


DIVERSION FROM DAVIS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 36
DIVERSIONS FROM LINVILLE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2-5	Gardner	1.60
6-10	Gardner	2.20
1,11,12	Capik	1.35
12,148-150	Curtis	3.15

Figure 11c



▲ Watermaster — installed recorder station.

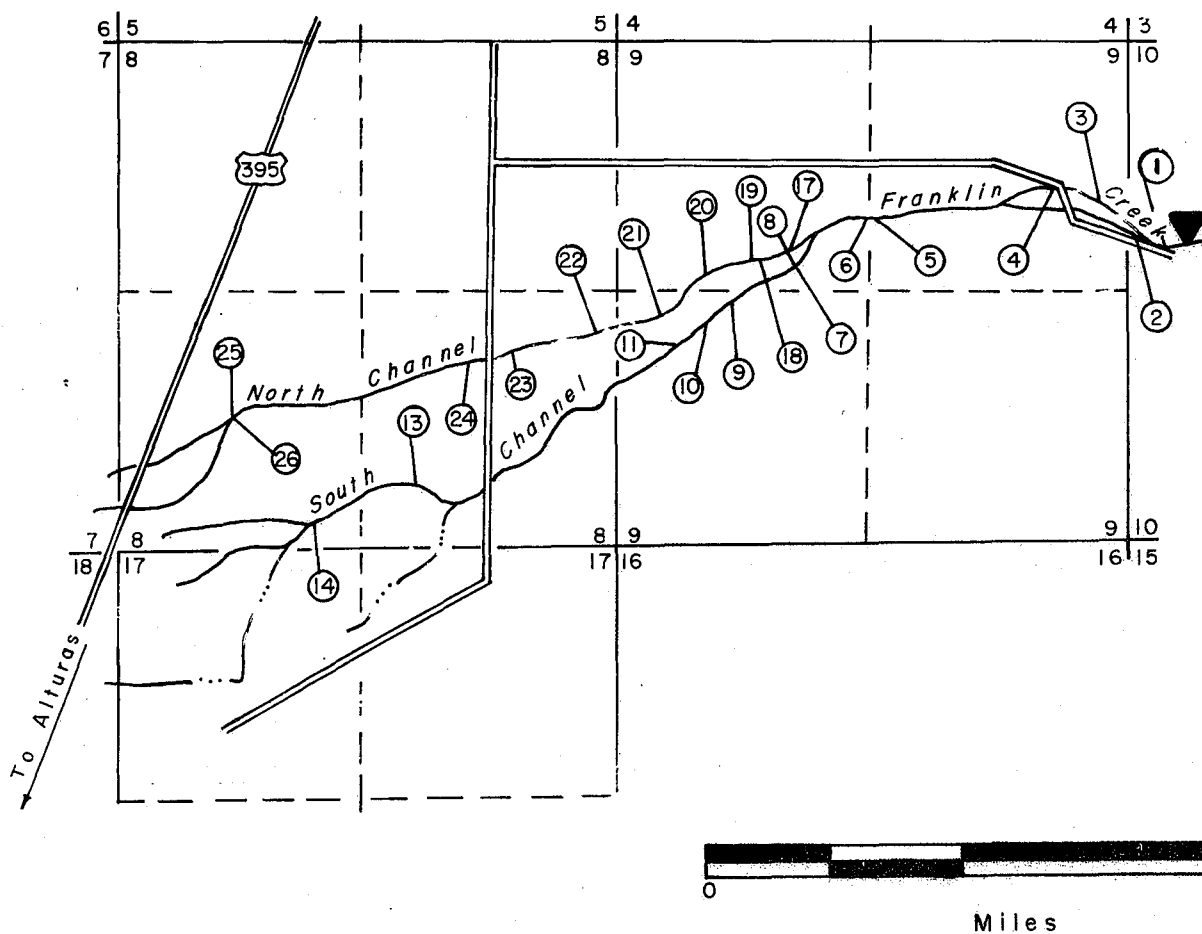
DIVERSIONS FROM LINVILLE CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 37
DIVERSIONS FROM FRANKLIN CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2-4	Curtis	0.53
5,6	Curtis	0.46
7,8	Gardner	2.72
9-11	Curtis	0.40
17-22,25	Curtis	2.93
21	Milhous	2.31
10,13,14,26	Goulding	2.31

Figure 11d

T 44 N, R 14 E M. D. B. & M.



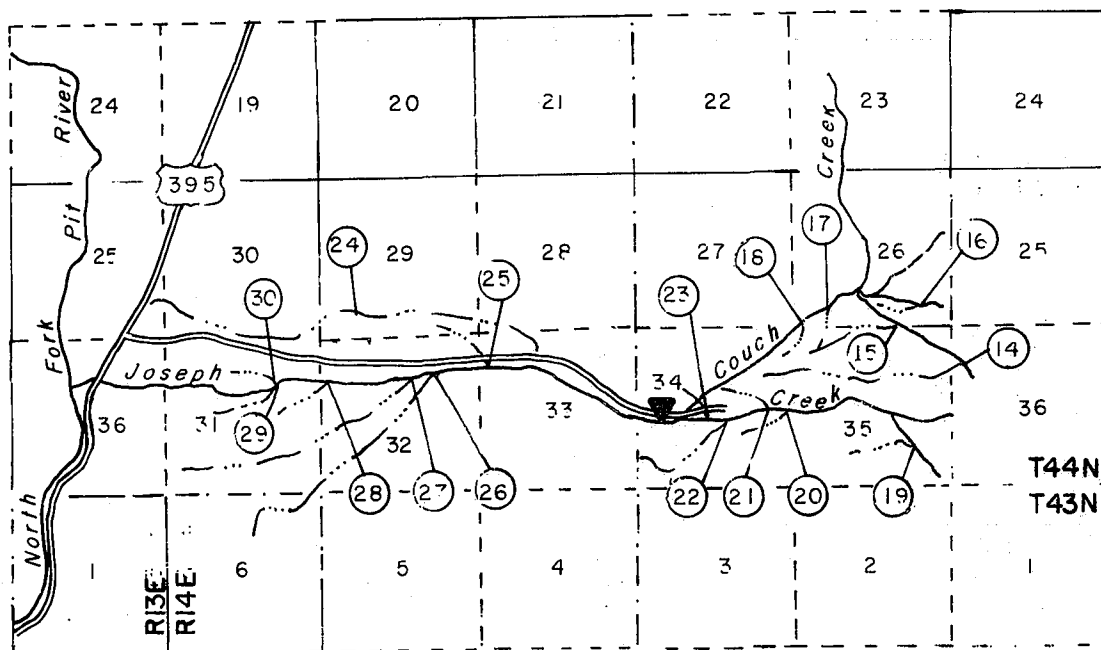
▲ Watermaster—installed recorder station

DIVERSIONS FROM FRANKLIN CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 38
DIVERSIONS FROM JOSEPH CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
14-18	U.S. Forest Service	1.15
19	McQueen	0.40
20-24	Cockrell, Inc.	1.38
22	Russell	0.40
24	Russell	0.50
24	Franks	0.10
26	U. S. Indian Service	1.30
24-30	Cockrell, Inc.	6.85

Figure 11e



▲ Watermaster-Installed recorder station



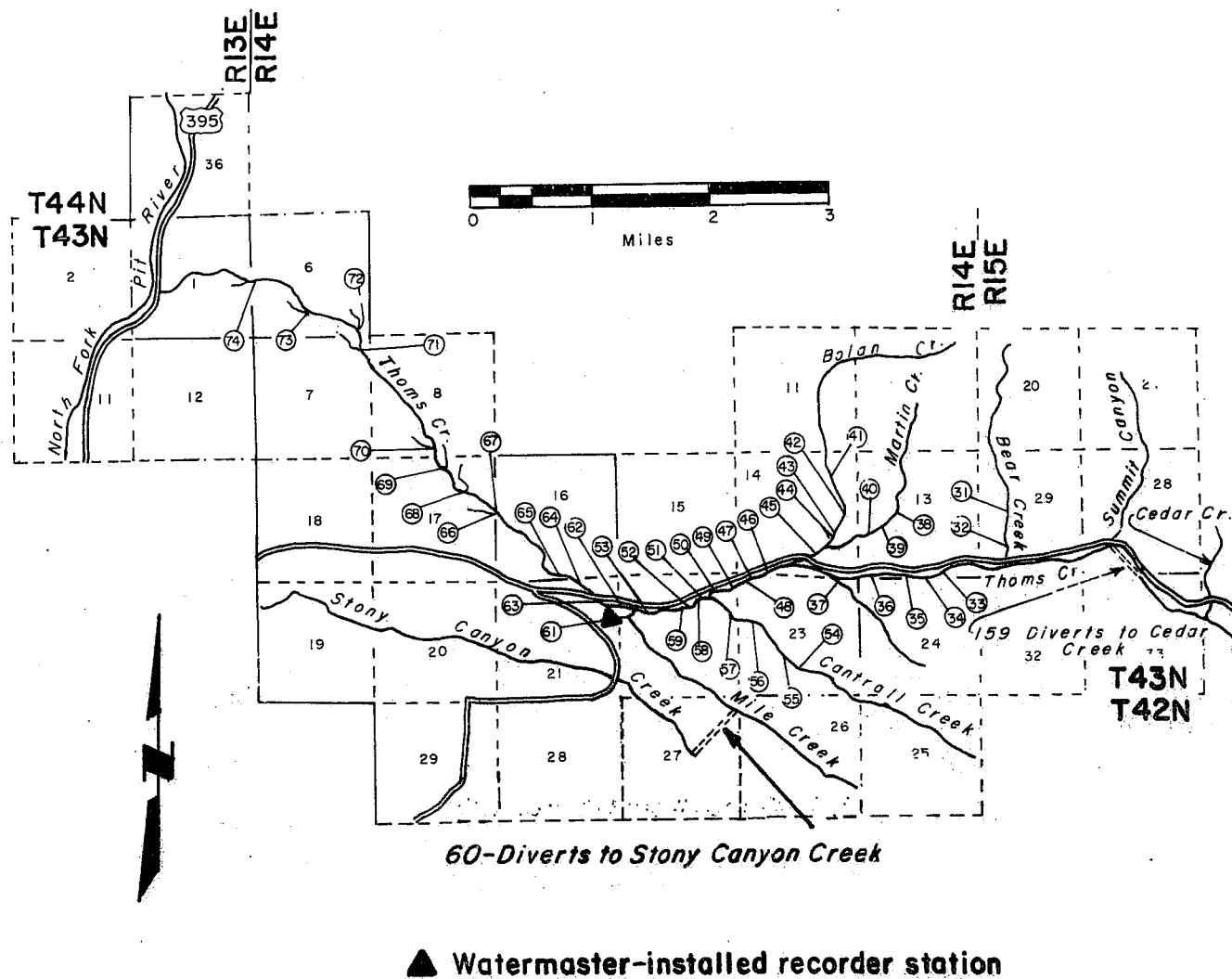
DIVERSIONS FROM JOSEPH CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 39

ALLOCATIONS FROM THOMS CREEK AND MILE CREEK

<u>Thoms Creek</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
31,31A,31B, 31B,32	Marr	0.100
33,34	Marr	0.051
35,36	Neer	
35,36	Armor	0.013
33,34,35	Neer	0.050
33,34,35	Putnam	0.025
33,34,35, 38,39,40	Marr	0.541
37,41-45	Dewitt	1.340
35,36	Baker	0.010
54,55,56	Dunlap	0.050
54,55,56	Brock	0.100
54,55,56	Hogan	0.080
54,55,56	Erickson	0.060
54,55,56	Marr	0.010
54,55,56	Ceragioli	0.120
54	Coppedge	0.040
56A	Sigler	0.060
46,47,57,61	Brown	1.250
62,63	Hart	0.250
64,65	State Wide Rent-A-Fence, Inc.	0.400
66-70	Beebe	1.140
	Spaulding	
71,72,73	Aldag, et al	0.650
74	Stanley	0.100
 <u>Mile Creek</u>		
60	Prock	0.800
60	Christopher	2.40
60	U. S. Indian Service	1.20

Figure 11f

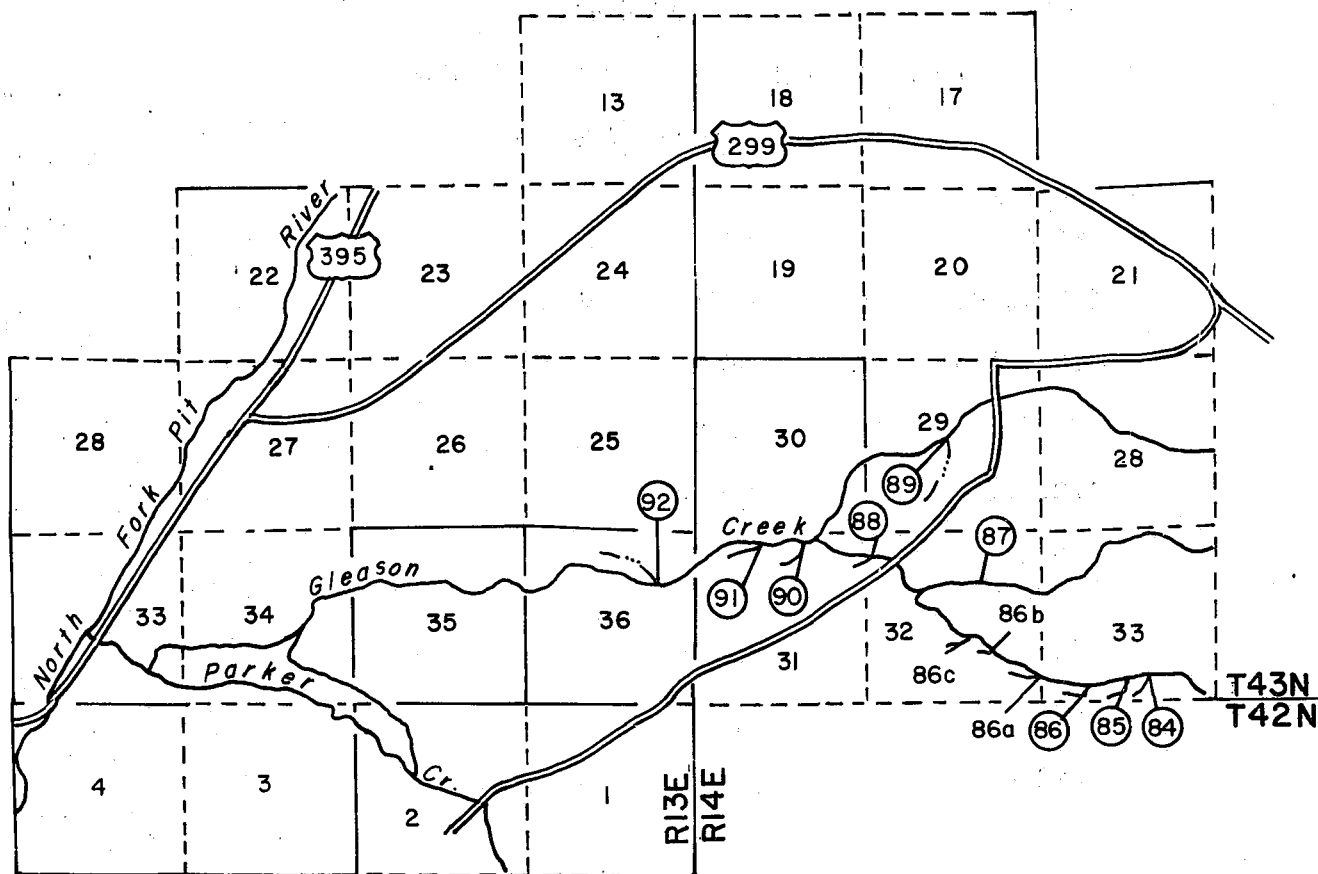


DIVERSIONS FROM THOMS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 40
DIVERSIONS FROM GLEASON CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
84-86	Russell	1.00
86 a,b,c	Hamilton	0.20
87-91	Stains	2.00
82	U.S. Indian Service	1.35

Figure 11g



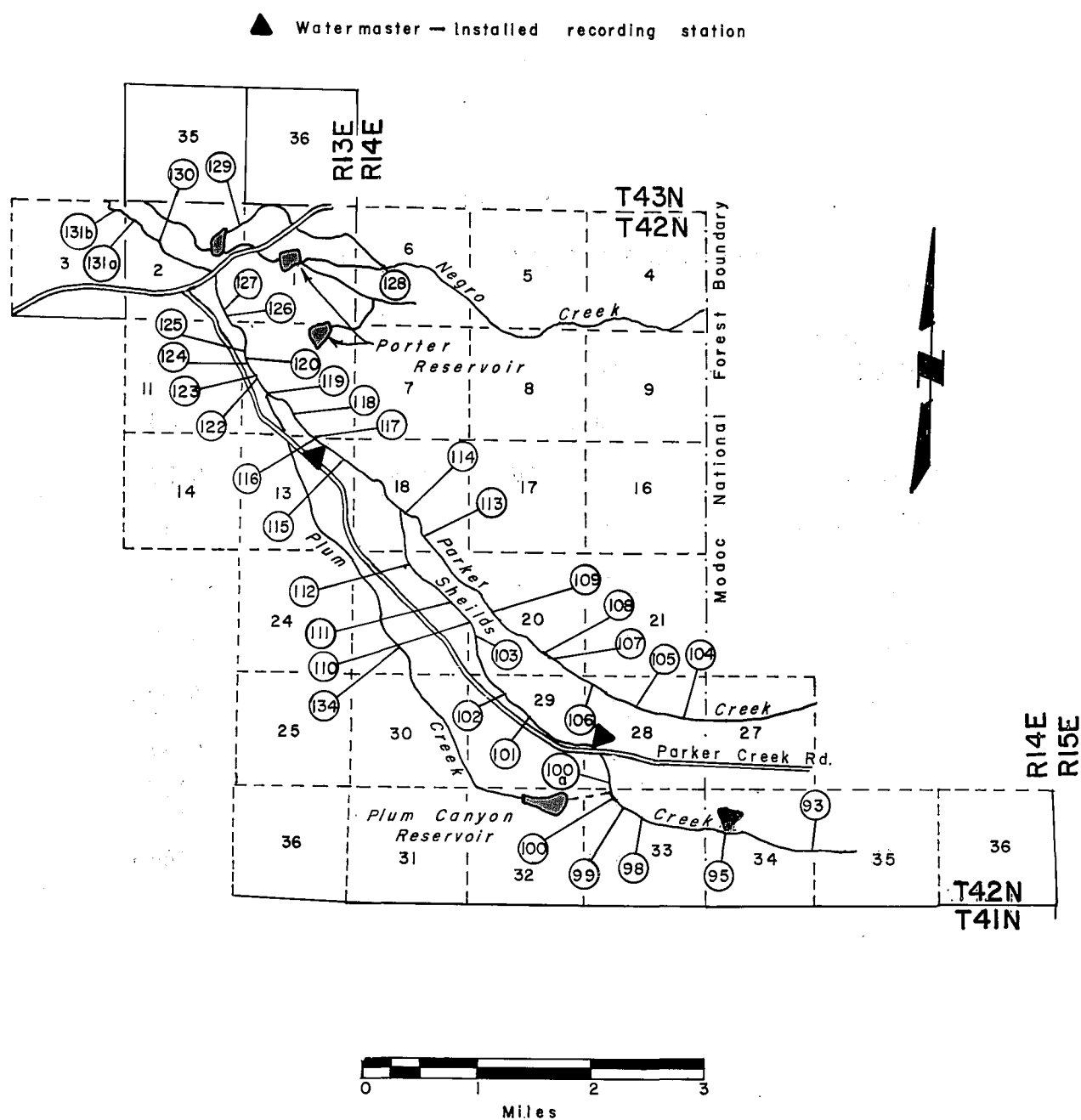
**DIVERSIONS FROM GLEASON CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA**

TABLE 41

DIVERSIONS FROM PARKER CREEK AND SHIELDS CREEK

<u>Parker Creek</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
104,105,106	Parker Creek Ranch	1.80
105,107-109	Weber	2.90
109	Imback	1.60
113,131	Volentine	5.58
116-118 120-124	Weber	2.08
123	Sorenson	0.10
123	Monroe	0.49
130-131a	U. S. Indian Service	2.97
<u>Shields Creek</u>		
95,98,99	Weber	2.25
93,100,100a	Piper	0.70
101-103,110	Weber	1.90
100,111	Bailey	2.15
112	Imback	0.20
134	Porter	0.16
134	Weber	0.34

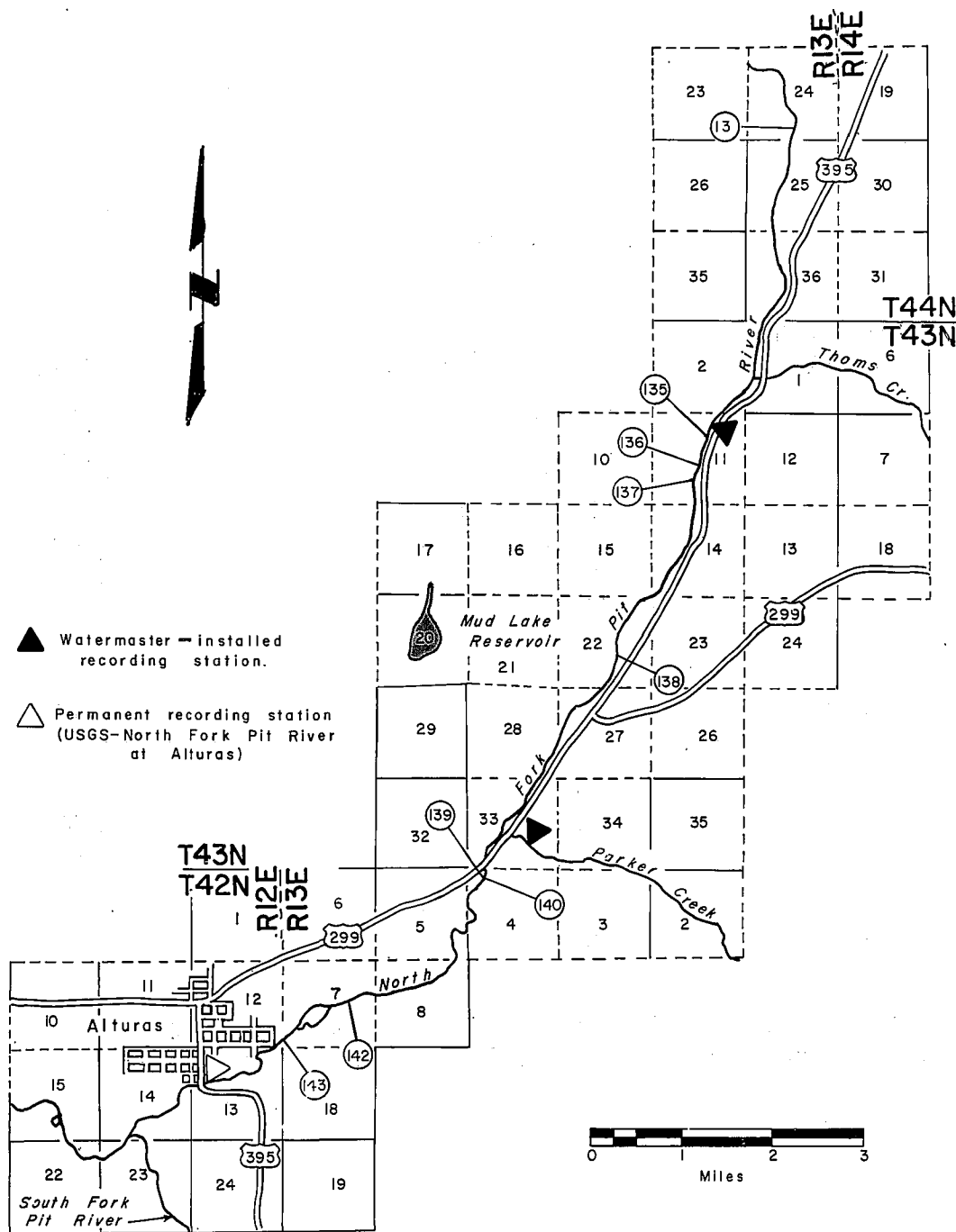
Figure 11h



DIVERSIONS FROM PARKER CREEK AND SHIELDS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 42
DIVERSIONS FROM NORTH FORK PIT RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
13	Quinn	0.35
135-138	U.S. Indian Service	10.73
139 or 140	Fitch	4.84
139	Schluter	14.47
141	Pahl	2.00
142	Schluter	4.00
	Baker	0.30
	Toles	0.32
	Moni	0.08
	Neer	0.16
143	Asher	1.44



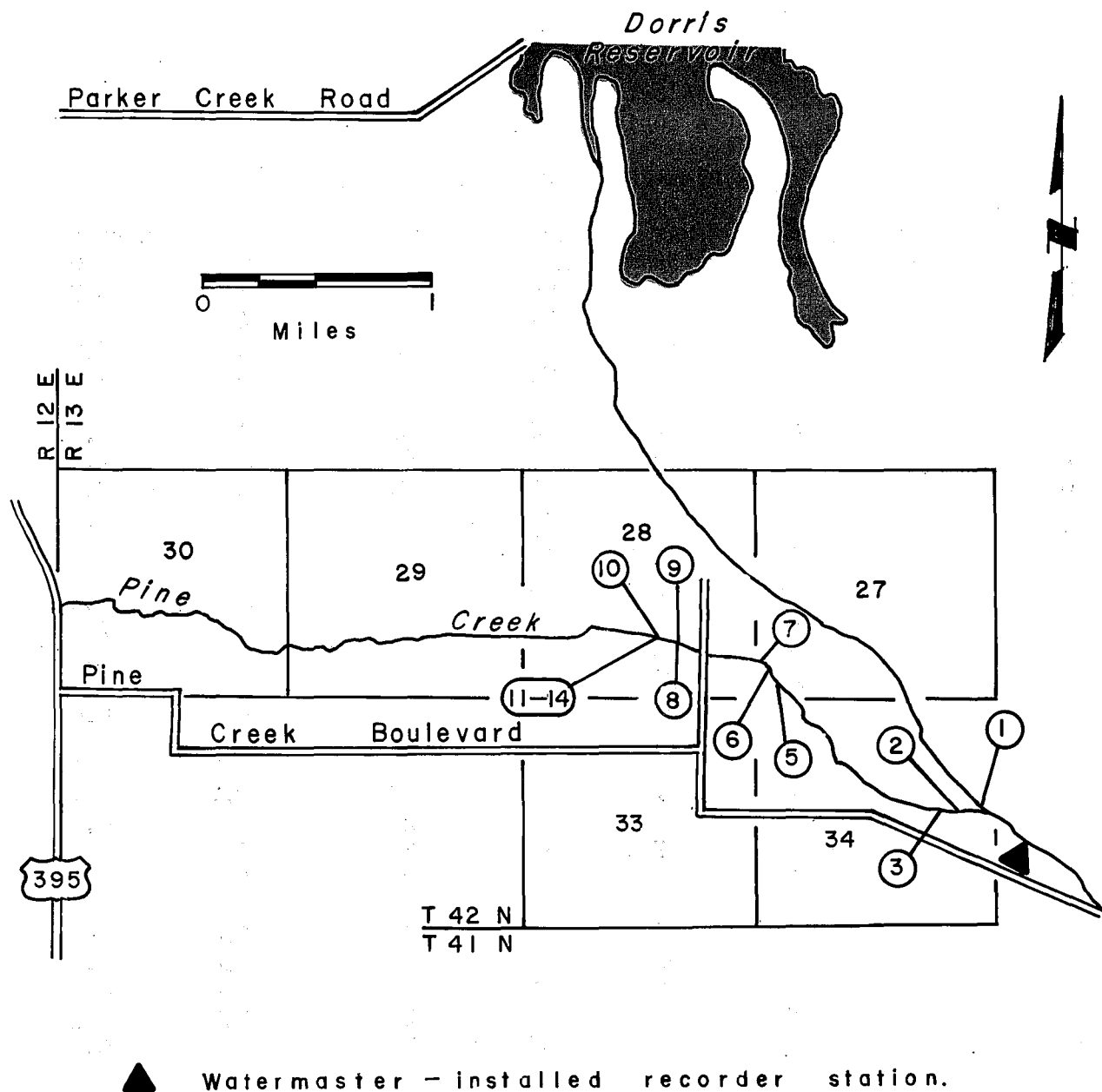
**DIVERSIONS FROM NORTH FORK PIT RIVER,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA**

TABLE 43
DIVERSIONS FROM PINE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Bagwell	0.30
	Porter	0.10
	Baker	0.13
	Struthers Family, Inc.	3.00
	Lemon	0.30
	Neer	0.43
	Baker	3.35
	Sullivan	0.14
	Wall	0.10
2,3,6,9	Rice	4.85
5	Baker	2.92
	Nelson	3.77
	Weber	4.41
	Younger	3.42
10	Wildlife Refuge	31.30
11-14	Dunn	1.49

NOTE: Pine Creek channel capacity below No. 5 is about 20 cfs.
Surplus Pine Creek flow is diverted into Dorris Reservoir.

Figure 11j



**DIVERSIONS FROM PINE CREEK,
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA**

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 44

1984 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK BELOW SCHROEDER'S

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		18	33	104	56	15	9.0
2		18	35	96	53	15	8.7
3		17	46	92	52	14	8.4
4		17	50	96	50	14	8.0
5		17	49	96	48	14	7.4
6		17	47	88	46	14	7.4
7		17	46	79	44	14	7.4
8		18	49	73	43	14	7.4
9		18	58	73	40	13	7.4
10		17	63	73	38	12	7.4
11		16	75	70	36	12	7.4
12		16	70	67	34	12	7.1
13		16	68	67	34	11	7.1
14		23	73	67	32	11	6.7
15		35	81	68	29	10	6.4
16		46	68	73	28	9.7	6.4
17		47	67	75	27	9.7	6.1
18		46	67	75	27	9.4	6.1
19		42	67	71	25	9.4	6.1
20		38	70	68	24	9.4	6.1
21		36	63	66	24	9.4	6.1
22		38	52	62	22	9.4	6.1
23		41	58	62	23	9.4	6.1
24		42	64	62	20	9.0	6.1
25		40	54	63	18	8.7	6.1
26		37	53	63	17	8.4	5.9
27		35	48	63	17	8.4	5.9
28		32	49	62	17	8.4	5.9
29		32	52	62	17	8.0	5.9
30		30	46	59	17	11	5.9
31			110		16	12	
MEAN		28.7	59.1	73.2	31.4	11.1	6.8
AC-FT		1710	3630	4350	1930	684	405

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 45

1984 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		9.1	7.2	25	11	1.6	2.0
2		9.1	12	22	10	1.6	1.8
3		9.1	31	21	9.6	1.6	1.6
4		9.1	36	22	9.1	1.6	1.6
5		9.1	35	25	8.4	1.6	1.6
6		9.1	34	32	7.6	1.3	1.3
7		8.6	33	30	6.8	1.1	1.3
8		8.6	32	27	6.0	1.1	1.3
9		8.6	31	26	5.1	1.1	1.3
10		8.0	29	23	5.0	1.1	1.1
11		8.0	41	23	4.8	1.1	1.1
12		7.6	52	21	4.6	1.1	1.1
13		8.0	53	20	4.4	1.1	1.1
14		8.6	48	20	4.2	1.1	1.0
15		24	37	20	3.9	1.1	1.0
16		22	31	21	3.7	1.1	0.9
17		19	29	21	3.5	1.1	0.9
18		17	27	21	3.2	1.1	0.9
19		12	24	21	3.0	1.1	0.9
20		10	28	20	2.8	1.1	1.0
21		7.4	29	18	2.6	1.1	1.0
22		7.8	28	16	2.3	1.1	1.0
23		12	34	15	2.1	1.1	1.0
24		13	30	15	2.1	1.1	1.0
25		10	28	15	2.0	1.1	1.0
26		7.8	29	15	2.0	1.1	1.0
27		6.8	29	15	1.9	1.1	1.0
28		6.0	30	14	1.8	1.1	1.0
29		5.6	30	12	1.8	1.1	1.0
30		5.6	28	11	1.7	1.8	1.0
31			27		1.6	2.2	
MEAN		10.4	31.4	20.2	4.4	1.2	1.2
AC-FT		619	1930	1200	272	77	69

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 46

1984 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK ABOVE DIVERSION NO. 4

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		30	44	80	41	10	8.2
2		29	44	74	39	11	4.6
3		28	45	72	38	12	4.0
4		28	54	80	37	15	6.4
5		30	50	65	33	14	5.8
6		29	50	79	31	13	7.0
7		26	49	70	29	11	7.0
8		29	50	63	26	10	5.8
9		27	56	60	24	10	5.8
10		29	62	59	23	9.4	5.8
11		28	71	59	22	9.4	5.8
12		27	86	57	21	9.4	5.2
13		23	99	58	21	9.4	3.8
14		22	89	58	18	8.8	3.6
15		29	75	60	17	8.2	4.0
16		30	72	62	15	7.6	4.0
17		35	77	62	17	7.6	4.0
18		38	76	61	17	7.0	3.8
19		38	78	59	17	7.0	3.8
20		35	90	60	20	7.0	7.0
21		33	86	56	19	6.4	5.2
22		33	83	53	18	7.0	5.2
23		33	93	52	19	6.4	5.2
24		33	93	51	17	7.0	6.4
25		33	90	51	16	6.4	6.4
26		33	90	50	14	6.4	6.4
27		32	90	48	12	5.8	6.4
28		30	92	47	11	6.4	6.4
29		35	87	46	11	4.6	6.4
30		42	89	44	10	15	6.4
31			90		10	16	
MEAN		30.9	74.2	59.9	21.4	9.2	5.5
AC-FT		1840	4560	3560	1310	564	330

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 47

1984 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK AT OLD POWERHOUSE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		3.3	3.6	4.1	3.3	2.8	2.5
2		3.3	3.5	4.1	3.3	2.8	2.5
3		3.3	3.5	4.1	3.1	2.8	2.5
4		3.3	3.6	4.1	3.1	2.8	2.5
5		3.3	3.6	4.1	3.1	2.8	2.5
6		3.3	3.5	4.2	3.1	2.8	2.5
7		3.3	3.5	4.4	3.1	2.8	2.5
8		3.3	3.5	4.2	3.0	2.8	2.5
9		3.3	3.6	4.1	3.0	2.6	2.5
10		3.3	3.8	3.9	3.0	2.6	2.5
11		3.4	4.1	3.8	3.0	2.6	2.5
12		3.4	4.4	3.8	3.0	2.6	2.5
13		3.4	4.8	3.8	3.0	2.6	2.5
14		3.4	4.9	3.8	3.0	2.6	2.5
15		3.5	4.6	3.8	2.9	2.6	2.5
16		3.5	4.4	3.6	2.9	2.6	2.5
17		3.5	4.2	3.5	2.9	2.6	2.5
18		3.4	4.2	3.5	2.9	2.6	2.5
19		3.4	4.4	3.5	2.9	2.6	2.5
20		3.4	4.6	3.5	2.9	2.6	2.5
21		3.4	4.4	3.5	2.9	2.6	2.4
22		3.4	4.5	3.4	2.8	2.6	2.4
23		3.4	4.6	3.3	2.8	2.6	2.4
24		3.4	4.5	3.3	2.8	2.6	2.4
25		3.4	4.4	3.3	2.8	2.6	2.4
26		3.4	4.4	3.3	2.8	2.6	2.4
27		3.3	4.4	3.3	2.8	2.6	2.4
28		3.3	4.4	3.3	2.8	2.6	2.4
29		3.4	4.2	3.3	2.8	2.6	2.4
30		3.4	4.2	3.3	2.8	2.6	2.4
31			4.1		2.8	2.6	
MEAN		3.4	4.1	3.7	2.9	2.7	2.5
AC-FT		201	255	221	181	163	147

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 48

1984 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		4.7	9.6	17	5.8	4.1	4.0
2		4.7	10	15	5.6	4.1	4.0
3		5.1	12	14	5.6	4.0	3.7
4		5.5	13	17	5.6	4.0	3.7
5		5.5	12	16	5.6	4.0	3.7
6		5.1	12	21	5.3	4.0	3.5
7		5.5	11	19	5.3	4.0	3.5
8		5.5	12	17	5.3	3.7	3.5
9		4.7	14	16	5.1	3.7	3.5
10		4.7	14	16	4.8	3.7	3.5
11		4.7	17	14	4.8	3.7	3.5
12		4.7	21	13	4.8	3.7	3.5
13		5.8	21	11	4.8	3.7	3.5
14		7.7	21	10	4.6	3.7	3.5
15		11	20	9.6	4.6	3.7	3.5
16		12	19	9.3	4.6	3.7	3.5
17		11	18	8.7	4.6	3.7	3.5
18		10	18	8.4	4.6	3.7	3.5
19		9.6	19	8.2	4.6	3.7	3.5
20		8.1	20	8.2	4.6	3.7	3.5
21		8.5	20	7.8	4.6	3.7	3.5
22		8.8	20	7.6	4.4	3.5	3.5
23		9.6	21	6.8	4.8	3.5	3.5
24		9.6	20	6.6	4.4	3.5	3.5
25		8.8	20	6.3	4.4	3.5	3.5
26		8.5	18	6.3	4.1	3.5	3.5
27		8.1	18	6.3	4.1	3.5	3.5
28		7.7	18	6.1	4.1	3.5	3.5
29		7.7	18	6.1	4.1	3.5	3.5
30		7.7	18	6.1	4.1	4.6	3.5
31			18		4.1	4.1	
MEAN		7.4	16.9	11.1	4.8	3.8	3.6
AC-FT		439	1040	663	293	231	211

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 49

1984 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		22	32	39	13	3.8	1.7
2		21	31	34	12	3.8	1.4
3		22	33	31	12	3.7	1.0
4		21	48	40	11	3.7	0.9
5		22	37	41	10	3.5	1.0
6		20	31	55	10	2.5	1.0
7		20	28	49	9.8	2.1	1.0
8		20	28	39	9.4	2.0	1.0
9		18	31	34	8.7	1.8	1.0
10		16	34	31	8.1	1.8	1.0
11		18	48	28	7.5	1.7	0.9
12		22	68	26	7.3	1.7	0.9
13		24	73	26	6.7	1.7	0.9
14		30	74	24	6.4	1.7	0.8
15		34	55	24	6.1	1.7	0.9
16		34	44	23	6.0	1.7	1.0
17		34	37	23	6.0	1.7	1.1
18		33	34	23	5.8	1.7	1.0
19		34	38	23	5.6	1.3	1.0
20		24	48	22	5.6	0.9	1.6
21		22	48	21	5.5	0.8	1.3
22		21	43	19	5.4	0.8	1.1
23		21	50	18	5.6	0.8	1.1
24		22	48	18	5.4	0.8	1.1
25		20	44	17	4.9	0.9	1.1
26		20	42	16	4.5	0.9	1.6
27		19	42	16	4.3	0.8	1.6
28		17	43	15	4.2	0.8	1.6
29		20	46	15	3.9	0.8	1.6
30		22	48	14	3.8	3.0	1.6
31			46		3.9	2.5	
MEAN		23	44	27	7.0	1.9	1.2
AC-FT		1380	2680	1590	433	114	69

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 50

1984 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER ABOVE PARKER CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		89	185	95	37	2.6	2.6
2		84	185	105	34	2.4	2.5
3		70	176	74	30	2.3	2.5
4		67	307	134	17	2.1	2.5
5		70	225	131	14	1.9	2.3
6		72	171	235	13	1.8	2.1
7		61	138	190	12	1.6	1.9
8		80	125	147	11	1.5	1.7
9		84	140	127	12	1.3	1.5
10		134	129	105	14	1.2	1.5
11		181	197	95	17	1.1	1.5
12		129	261	77	20	1.0	1.4
13		101	240	75	13	0.9	1.4
14		91	242	70	9.0	0.8	1.3
15		111	216	51	5.5	0.8	1.3
16		123	174	46	5.0	0.8	1.2
17		129	125	41	5.0	0.9	1.2
18		119	119	34	5.0	0.9	1.2
19		129	129	32	5.0	1.0	1.4
20		103	152	34	4.5	1.0	1.8
21		86	147	37	4.5	1.0	1.6
22		82	136	29	4.5	1.1	1.6
23		84	145	26	4.0	1.1	1.8
24		86	145	24	16	1.1	1.8
25		77	129	21	13	1.2	1.8
26		70	129	21	3.5	1.2	2.0
27		66	129	24	3.5	1.2	2.0
28		58	119	29	3.3	1.2	2.0
29		70	117	31	3.1	1.2	2.0
30		89	119	30	2.9	3.0	2.0
31			119		2.8	2.8	
MEAN		93.2	164	72	11.1	1.4	1.8
AC-FT		5540	10060	4300	683	87	105

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 51

1984 Daily Mean Discharge
(In cubic feet per second)

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		27	30	32	13	2.8	2.0
2		27	33	30	12	1.8	1.5
3		27	38	29	12	2.3	1.1
4		27	45	34	12	2.3	1.1
5		27	42	35	11	2.3	1.1
6		26	42	41	11	2.3	1.1
7		26	41	42	11	2.0	1.1
8		27	42	39	11	2.0	1.0
9		25	45	38	10	2.0	1.1
10		24	47	35	10	2.0	1.1
11		24	60	33	10	1.8	1.1
12		26	56	31	9.7	1.8	1.1
13		28	55	32	9.3	1.8	1.1
14		33	47	29	8.8	2.0	0.9
15		42	45	27	8.3	2.0	0.9
16		42	44	26	7.8	2.0	0.9
17		40	44	24	7.2	2.0	0.7
18		40	43	24	6.7	2.0	0.7
19		36	46	23	6.2	2.0	0.7
20		35	45	22	5.8	2.0	0.9
21		36	44	22	5.4	2.0	0.9
22		36	44	20	5.1	1.5	0.9
23		37	44	19	4.8	1.3	0.9
24		35	42	17	4.5	1.1	0.9
25		33	41	16	4.2	1.1	0.9
26		32	40	15	3.9	1.1	0.9
27		29	39	14	3.6	1.1	0.9
28		29	38	14	3.3	1.1	0.9
29		29	38	13	3.0	1.1	0.9
30		29	37	13	3.0	1.5	0.9
31			35		2.8	2.8	
MEAN		31.1	43.0	26.3	7.6	1.9	1.0
AC-FT		1850	2640	1560	469	115	60

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 52

1984 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK AT FOGARTY RANCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		104	134	106	29	7.6	6.0
2		104	156	96	28	7.3	5.3
3		103	198	NR	29	7.3	4.6
4		103	229	NR	26	7.3	4.6
5		102	190	NR	25	7.3	3.6
6		103	164	NR	24	7.3	3.4
7		94	156	NR	24	7.3	3.2
8		103	166	NR	22	7.0	3.0
9		94	181	NR	21	6.8	2.8
10		93	186	NR	20	6.5	2.8
11		90	236	114	18	6.3	2.6
12		90	250	104	17	5.8	2.8
13		98	234	95	16	4.6	2.8
14		123	229	89	15	4.2	2.6
15		167	198	83	14	4.2	2.6
16		184	176	77	14	3.2	2.6
17		172	164	71	14	3.0	2.5
18		158	159	68	14	2.8	2.5
19		145	166	66	14	2.8	2.6
20		132	181	67	14	2.6	3.0
21		122	172	62	14	4.8	2.8
22		130	139	52	12	7.0	2.6
23		146	178	46	8.2	6.8	2.6
24		132	162	43	6.0	5.8	2.8
25		128	153	42	10	5.8	2.8
26		123	148	36	11	6.3	2.8
27		118	140	34	11	6.0	2.8
28		114	134	32	9.0	6.0	2.8
29		111	132	32	8.2	5.8	2.8
30		111	129	31	8.4	5.3	2.8
31			120		7.6	9.9	
MEAN		118	174		16.2	5.8	3.1
AC-FT		7020	10690		998	358	185

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 53

1984 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK NEAR MOUTH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1				132	35	4.2	2.5
2				117	34	3.9	2.0
3				108	32	3.5	1.5
4				142	23	3.2	1.5
5				121	16	2.9	1.5
6				113	15	2.6	1.5
7				216	16	2.3	1.5
8				177	14	2.0	1.5
9				137	13	1.7	1.5
10				123	15	1.5	1.5
11			215	106	14	1.2	1.4
12			279	96	19	1.0	1.4
13			281	84	15	0.8	1.4
14			270	78	13	0.8	1.3
15			224	66	12	0.6	1.2
16			164	62	9.4	0.6	1.1
17			144	64	8.6	0.6	1.0
18			129	55	8.0	0.5	1.0
19			134	49	8.4	0.5	1.2
20			146	54	8.2	0.4	1.2
21			142	56	7.0	0.4	1.4
22			129	37	7.4	0.4	1.6
23			142	34	7.0	0.5	1.6
24			141	29	6.7	0.5	1.8
25			132	26	6.4	0.6	1.8
26			144	22	6.0	0.6	2.0
27			171	22	5.7	0.6	2.0
28			165	22	5.4	0.6	2.0
29			162	29	5.1	0.6	2.0
30			161	27	4.8	2.0	2.0
31			155		4.5	3.0	
MEAN			173P/	80.1	12.7	1.4	1.6
AC-FT			7200P/	4770	783	88	93

P - Partial month total.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 54

1984 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK ABOVE DIVERSION NO. 95

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			15	14	11	6.5	4.9
2			15	14	11	6.3	4.7
3			17	14	10	6.3	4.5
4			17	15	10	6.3	4.5
5			16	15	10	6.3	4.2
6			16	17	9.9	6.3	4.2
7			17	17	9.9	6.0	4.2
8			17	16	9.6	6.0	4.0
9			16	16	9.6	6.0	4.0
10			16	15	9.4	5.8	3.8
11			18	15	9.2	5.6	3.8
12			19	15	9.0	5.4	3.8
13			19	15	9.0	5.4	3.8
14			19	14	8.8	5.4	3.6
15			19	14	8.8	5.2	3.6
16			18	14	8.5	5.2	3.6
17			17	14	8.5	5.2	3.6
18			17	13	8.3	4.9	3.6
19			16	13	8.3	4.9	3.6
20			16	13	8.3	4.7	3.6
21			17	13	8.1	4.7	3.6
22			16	12	8.1	4.7	3.6
23			17	12	7.8	4.7	3.6
24			17	12	8.1	4.5	3.6
25			16	12	7.6	4.5	3.6
26			16	11	7.4	4.5	3.6
27			15	11	7.2	4.2	3.6
28			15	11	7.0	4.2	3.6
29			15	11	6.7	4.2	3.6
30			15	11	6.7	5.6	3.6
31			15		6.5	6.0	
MEAN			16.6	13.6	8.6	5.3	3.7
AC-FT			1020	811	532	328	322

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 55

1984 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	31	34	35	112	62	30	23
2	29	34	36	102	59	30	22
3	22	27	37	92	57	30	22
4	19	26	59	95	55	30	22
5	18	26	47	91	53	30	22
6	17	30	39	96	53	30	22
7	18	27	36	91	51	24	22
8	18	28	37	81	50	23	22
9	19	29	40	74	50	22	22
10	19	31	42	68	48	22	22
11	20	32	47	62	46	22	22
12	20	28	55	58	44	22	22
13	21	27	58	55	41	22	21
14	21	26	65	52	40	22	21
15	21	26	69	51	39	21	21
16	21	30	73	52	37	21	21
17	20	34	71	57	36	21	20
18	20	36	68	62	35	21	21
19	19	36	69	68	35	21	21
20	20	36	76	71	34	21	21
21	22	23	81	71	33	21	21
22	22	33	97	67	32	21	21
23	21	33	113	64	32	21	21
24	22	34	109	61	32	21	21
25	22	34	112	61	29	21	21
26	40	34	107	62	29	21	21
27	37	34	102	64	29	21	21
28	32	35	113	64	30	22	20
29	30	35	117	63	30	22	20
30	29	35	124	63	30	25	22
31	27		119		30	27	
MEAN	23.1	31.4	72.7	71	40.7	23.5	21.4
AC-FT	1420	1870	4470	4220	2500	1440	1270

SCOTT RIVER WATERMASTER SERVICE AREA

The Scott River service area is in western Siskiyou County and consists of four tributaries of the Scott River: French Creek, Shackleford Creek, Sniktaw Creek, and Wildcat Creek. Before 1980, French Creek and Shackleford Creek were separate service areas. Wildcat Creek came into service in 1981, and the four tributaries to the Scott River were combined to form the Scott River watermaster service area.

1984 Distribution

Watermaster service began in the Scott River service area on April 1 with Lester Lighthall, Water Resources Technician II, as watermaster. Kenneth E. Morgan, Water Resources Engineering Associate also served as watermaster from May 18 to September 30.

The available water supply for Scott River tributaries was near normal.

French Creek

The French Creek service area is in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows northeast through the center of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about three miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek one mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin and some additional lands along the west side of the Scott River near the town of Etna. It is about 0.5 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

A map of the French Creek stream system with the diversions and roads is presented as Figure 12, page 133.

Basis of Service

The rights of this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and the French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake system, with seven.

These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek, and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount but are subject to the exclusive control of the other owners of the ditch.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

Water Supply

The water supply comes from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of French Creek, is presented in Table 61, page 144.

French Creek 1984 Distribution

The season started on French Creek with all seven priorities being filled and continued until the last week of July. After August 3 the upstream priority allotments were regulated in decreasing quantities to satisfy fourth priority rights. Rotation was initiated on August 19 on Diversions 43 and 44 and, at that time, 50 percent of fourth priority was being filled. From August 27 through September, the streamflow was sufficient to fill a portion of fourth priority allotments.

All three priority allotments were filled all season on Miners Creek. No water was diverted from Duck Lake Creek or French Creek into Miners Creek this season.

Shackleford Creek

The Shackleford Creek service area is in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long, with the main axis and drainage running from south to north. Elevations on the agricultural area range from about

3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River. A map of the Shackleford Creek stream system is presented as Figure 12b, page 137.

Basis of Service

The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The upper Shackleford Creek group and lower Shackleford Creek group each have seven priority classes, and the upper Mill Creek group and lower Mill Creek group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by owners.

Water Supply

The water supply for Shackleford Creek comes from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff and Campbell Lakes, near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow in the Shackleford Ditch.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cfs.

Shackleford Creek 1984 Distribution

There was sufficient water available to fill all priorities until the last week of July.

Campbell Lake water was released about August 15, however, due to an obstruction in the pipeline near the head of Diversion No. 4, the Shackleford Ditch capacity was limited to only 5 cfs.

Water was available to priority 6 from August 15 through September 30.

Lower Shackleford Creek Diversion No. 17 had ample water until the last week of July and then the available flow decreased to about 3 cfs during August and September at Diversion 17.

There was surplus flow past Diversion 19 all season as the Shackleford Creek flow rises below Diversion 17.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, seven miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about three miles long and one mile wide, running from south to north. Elevations in the Sniktaw watershed range from 6,700 feet in the southwest to about 2,650 feet at the confluence of Sniktaw Creek and Scott River.

A map of the Sniktaw Creek stream system is presented as Figure 12c on page 139.

Basis of Service

The Sniktaw Creek service area was added to the Scott River watermaster service area on April 1, 1981. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980.

The allotments are defined in the Scott River Decree, Schedule B 38, which has three priority allotments.

Water Supply

The water supply for Sniktaw Creek comes from snowmelt, springs and seepage. Water from Shackleford Creek (Diversions 3, 17, 19, 20, and 21) supplements available water in Sniktaw Creek.

Return water from Heide's Shackleford Creek Ditch, Diversion 3, commingles with natural flow of Sniktaw Creek. After leaving the Heide property and entering Sniktaw Creek, it is allotted as set forth in Schedule B38 (Sniktaw Creek) from Diversions 665 to 679.

Heide may use tailwater from Shackleford Creek Ditch, Diversion 3, for irrigation of 27 acres under License 10875 issued on Application 22882 for use on former Indian lands. The right may be exercised only at times that Heide is receiving water from Shackleford Creek Ditch, Diversion 3, or at times that all Sniktaw Creek allotments are being filled.

Sniktaw Creek 1984 Distribution

All of Sniktaw Creek priorities were filled until the last week of July, after which a portion of second priority was filled until September 30.

Shackleford Creek, Diversion No. 3, diverted water into Sniktaw Creek all season except from about August 2 until August 28. This season was an excellent water supply due to Shackleford Creek diversion diverting water into Sniktaw Creek.

Wildcat Creek

The Wildcat Creek service area is in western Siskiyou County near the town of Callahan. The major sources of water are Wildcat Creek, which flows through the service area, foreign water imported from Jackson Creek, Grizzly Creek and Camp Gulch. A map of Wildcat Creek stream system is presented as Figure 12d on page 141.

Basis of Service

The Wildcat Creek watermaster area was started May 1, 1980. Water is distributed under a statutory adjudication that resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980. The allotments are defined in the Scott River Decree, Schedule B 10.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Wildcat Creek 1984 Distribution

The water supply was much above normal.

Import water from Sugar Creek and Jackson Creek assured an excellent water supply for the Kerrigan ranch. Wildcat Creek and Kerrigan ranch runoff provided the Struckman ranch an ample water supply.

Recorders were installed on parshall flumes at diversion points A and B.

Oro Fino Creek

The Oro Fino Creek watermaster service area is in southwestern Siskiyou County near the town of Greenview. It encompasses an agricultural area about 5 miles long and 0.5 mile wide, running from south to north. Elevations along Oro Fino Creek range from 2,900 feet near the headwaters to 2,700 feet at the confluence of Oro Fino Creek and the Scott River.

A map of the Oro Fino Creek stream system is presented as Figure 12e on page 143.

Basis of Service

The Oro Fino Creek service area was added to the Scott River watermaster service area on July 1, 1984. Water is distributed under the provision

of the statutory adjudication which resulted in Decree 30662, Siskiyou County Superior Court, dated January 6, 1980.

Water Supply

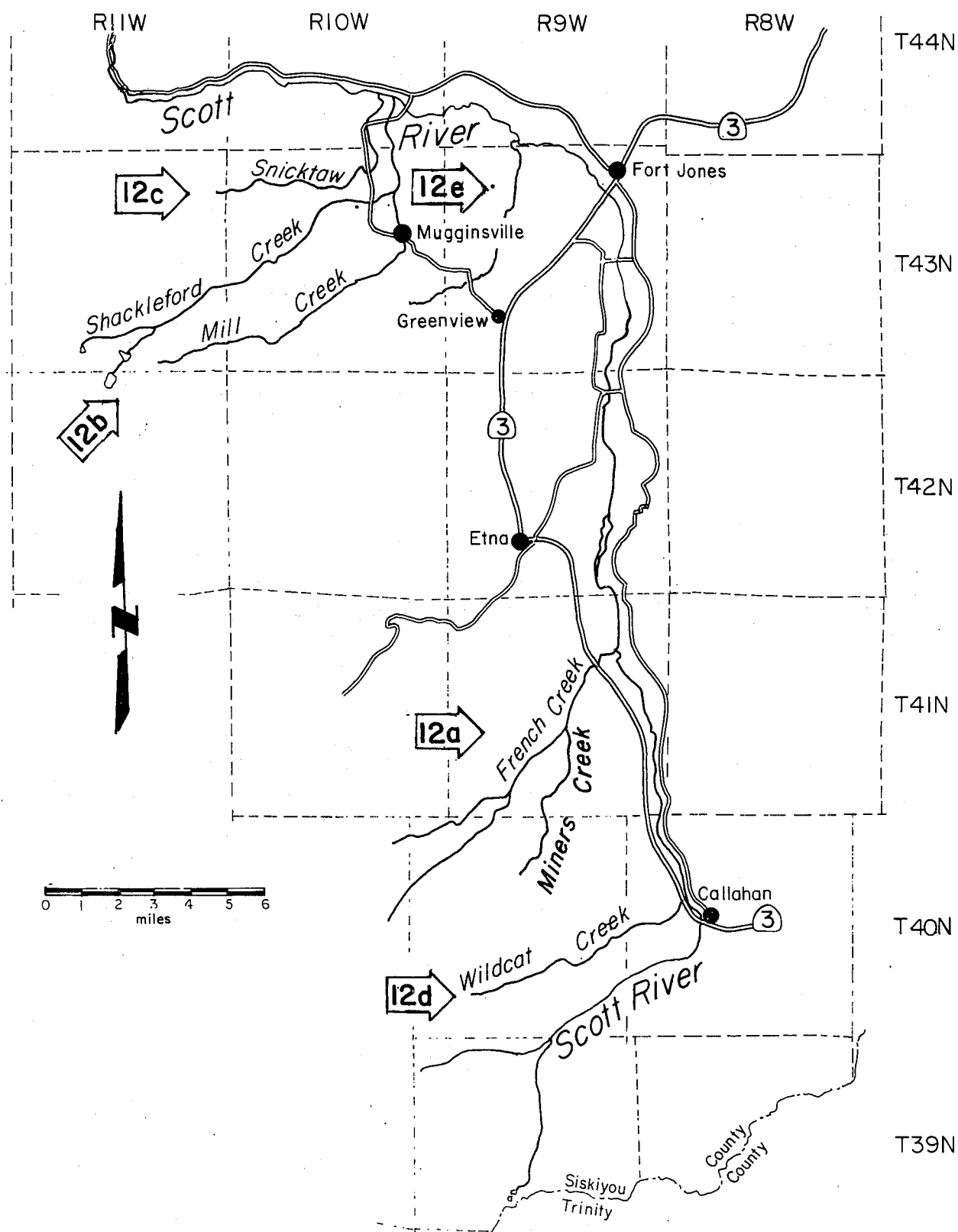
The water supply for Oro Fino Creek above Diversion 606 is derived from Kidder Creek. Springs feed Oro Fino Creek below Diversion 607. Allotments are diverted from underflow by means of offset wells or sumps at Diversions 606, 606a, 611, 612. At Diversions 607, 608, 609, 610, 613, 613a, 614, 615, and 616 allotments may be diverted, at the option of the claimant, from surface flow or from underflow by means of offset wells or sumps or a combination of both; provided, that when surface flow in the creek, at the county road at the O. Lewis property recedes to 3 cfs, the percentage or amount of the surface flow reaching the point of diversion of each of the following claimants shall be bypassed at the claimant's lower property line: Friden 51%, O. Lewis 96%, and Luckensmeyer all flow in excess of 1.31 cfs.

The ground water along Oro Fino Creek is recharged mainly by Kidder Creek Diversions 446 and 448 which supply surface water to the Foster and Friden lands. Kidder Creek streamflow for these diversions is mainly snowmelt runoff.

Oro Fino Creek 1984 Distribution

The water supply was near normal. A recorder was installed at the county road at the O. Lewis property line and the flow was 3.3 cfs on July 1, 1984. The flow remained above 3.0 cfs until July 23. The Kidder Creek diversion into Oro Fino Creek stopped about mid-July and then the Oro Fino surface flow started to decline. The flow at the Oro Fino recorder receded to 2.2 cfs on July 25, 0.88 cfs on August 14, 0.22 cfs on August 28. The flow remained fairly steady at the county road recorder and was 0.36 cfs on September 20. The Friden pumps were off from September 20 for the remainder of the year. The flow at the recorder was 0.63 cfs on October 8.

Figure 12

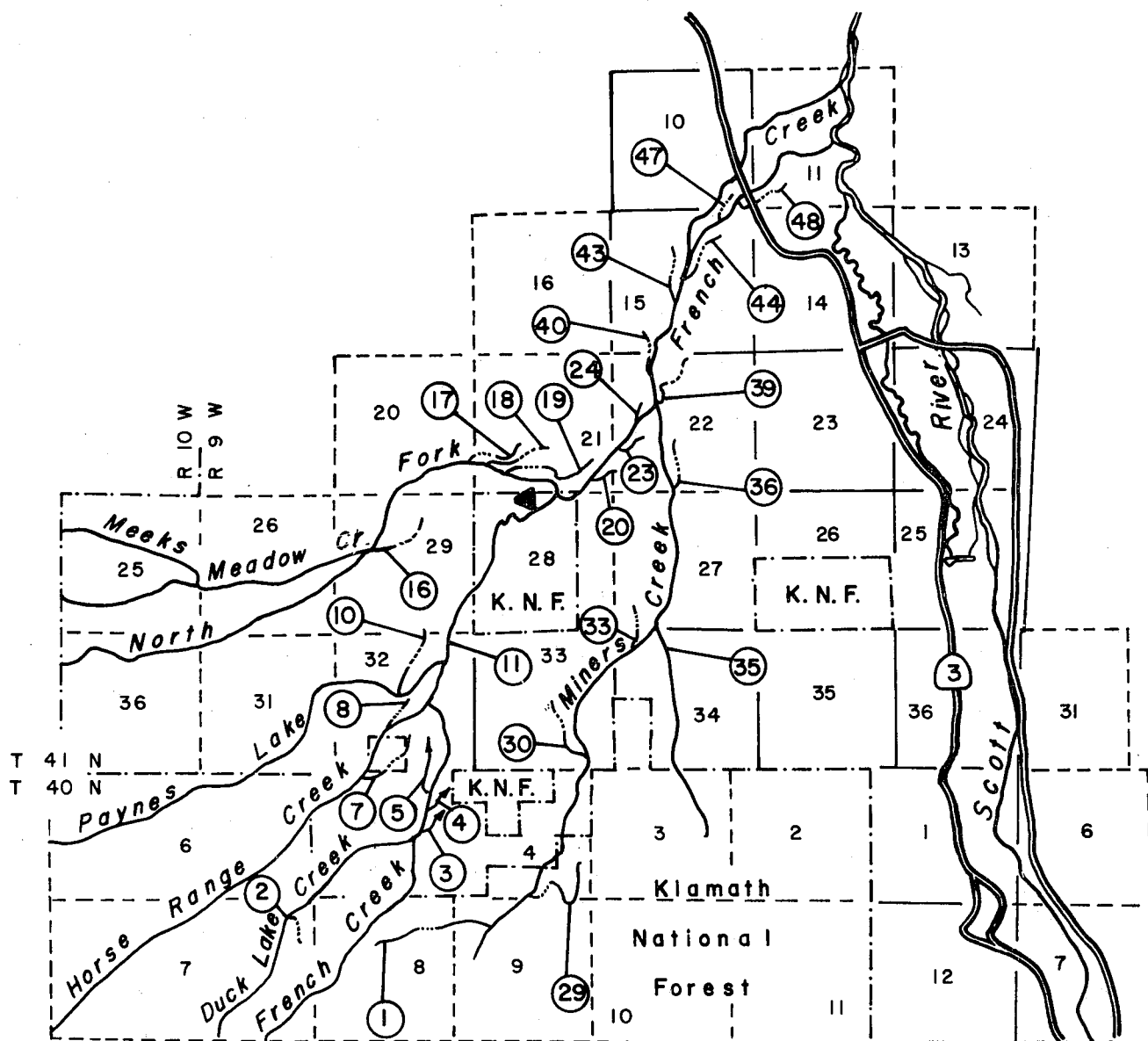


INDEX MAP
SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 56
DIVERSIONS FROM FRENCH CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1,2,29	Fuglistaler	2.50
3,30	Danielson	2.08
4,33,35	Lewis	2.33
5	Wainwright, Murphy, Petterson	3.17
7,8,10	Johnson	1.93
11	MacGowen, Byers	2.36
16	International Paper Co., Thompson	0.06
17	T-D Ranch, J.A.F.M. Co., Veal	7.32
18	Wilson	0.49
19	S. P. Land Co.	0.14
20	Ventrella, Larsen, Hauex, Hughes	0.23
23,40	Ventrella	1.65
24	Wilson	0.12
36	Larsen	0.25
43	Christen, T-D Ranch	4.53
44	Oxley, T-D Ranch	2.09
47	Christen, T-D Ranch	0.76
48	Spencer	0.76

Figure 12a



▲ Watermaster-installed recorder station

0 1 2 3
miles

DIVERSIONS FROM FRENCH CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 57
DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK

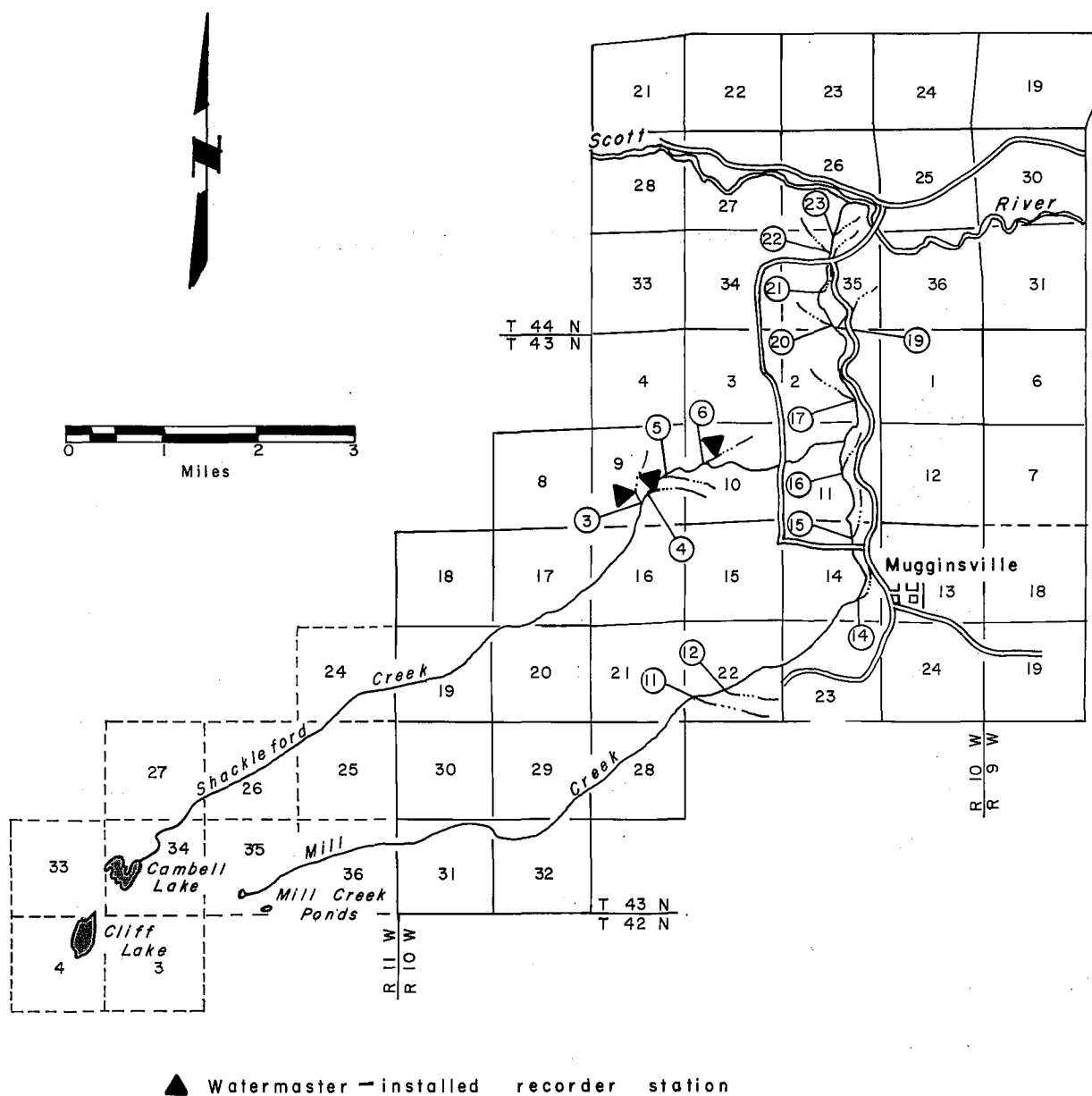
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
3	R. Eastlick Ditch	3.80
4	Shackleford Ditch	11.00
5	Howard-Jones Ditch	4.90
6	Camp Ditch	5.00
11	Eastlick Ditch	10.62
12	Couch Ditch	0.62 ^{1/}
14	China Ditch	1.40
15	Dangel Ditch	0.50
16	Denny Bar Ditch	0.50
17	Freita Ditch	6.60
19	Hammond-Crawford-Lewis Ditch	3.60 ^{2/}
20	Burton-Meamber Ditch	5.80
21	Tozier	4.00
22	Burton	1.20 ^{3/}
23	Burton	1.20 ^{3/}

^{1/} Out of 11 or 12

^{2/} Plus rights not in service area

^{3/} In either 22 or 23

Figure 12b

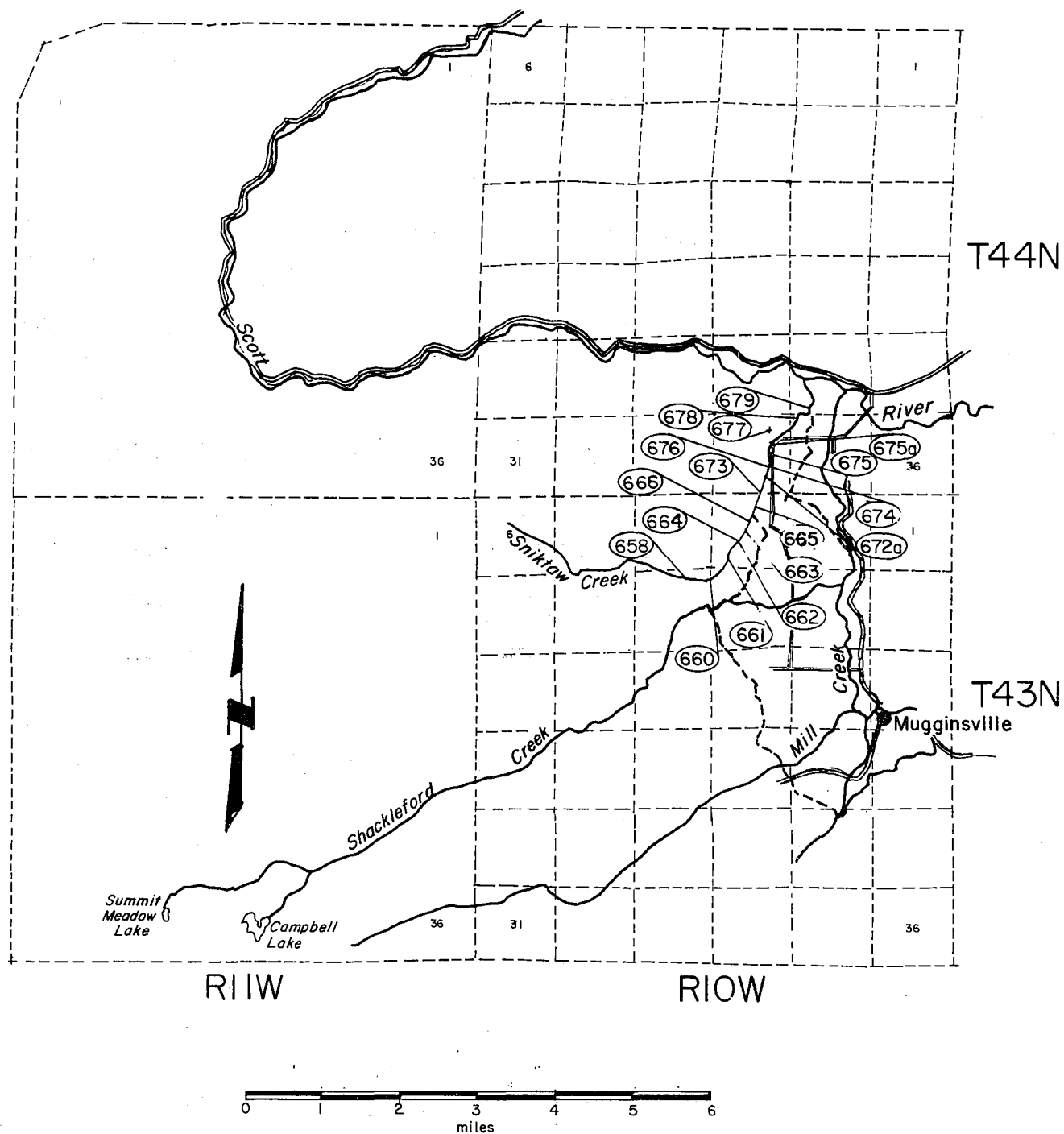


DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 58
DIVERSIONS FROM SNICKTAW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
658-4, 661-4, 662-4, 663-4, 664-4	Heide	4.26
660-4	Weathers	0.01
665-4, 666-4	Evans	0.32
672a-4	Robinson	0.01
673-4	Broce	0.01
674-4, 676-4	Burton	1.18
674-4	Mulder	0.74
674-4, 678-4, 679-4	Glascock	2.96
675-4	McClellan	0.01
675a-4	Pearson	0.01

Figure 12c

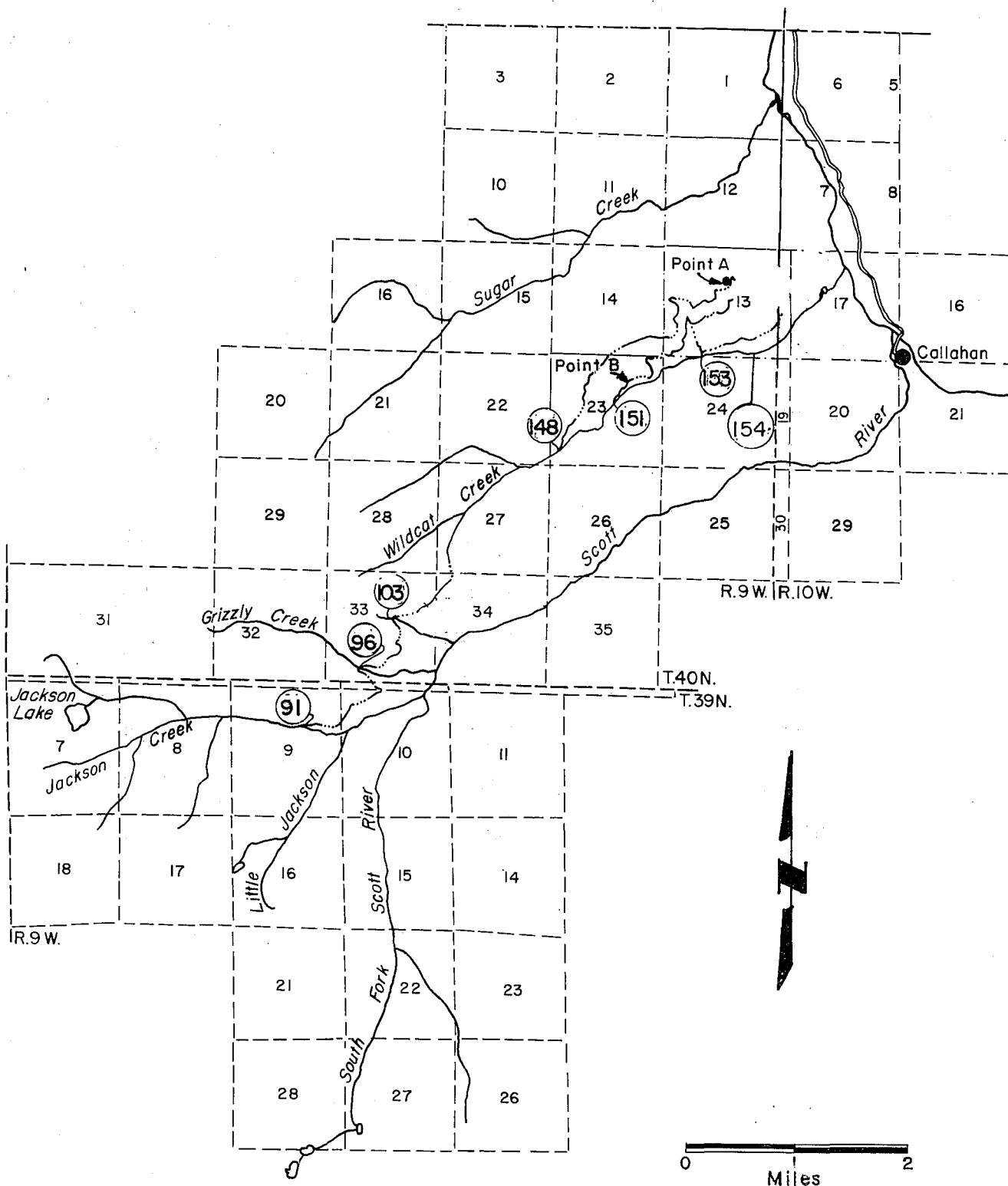


DIVERSIONS FROM SNICKTAW CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 59
DIVERSIONS FROM WILDCAT CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
91,96,103	Kerrigan	4.10
148	Kerrigan	4.76
151	Struckman	1.84
153	Struckman	0.12
154	Kerrigan	0.40

Figure 12d .

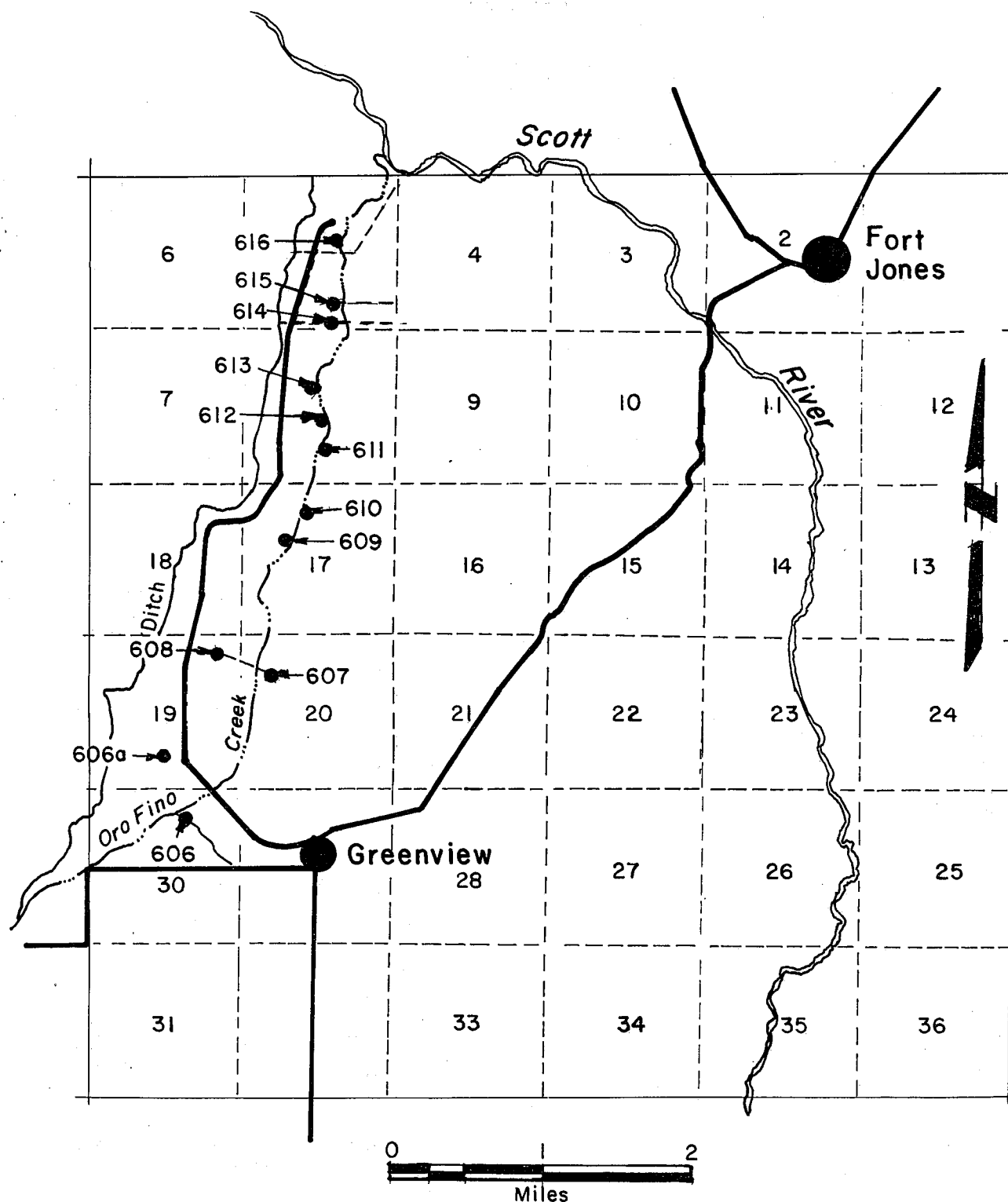


DIVERSIONS FROM WILDCAT CREEK, SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 60
DIVERSIONS FROM ORO-FINO CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
606	Lewis, R.	1.79
606a	Friden	0.71
607-609	Friden	8.40
610	Lewis, O.	0.36
611	Gansberg	0.29
612	Vogt	1.43
613	Luckensmeyer	1.32
614-616	Foster	7.14

Figure 12e



DIVERSIONS FROM ORO FINO CREEK SCOTT RIVER WATERMASTER SERVICE AREA

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 61

1984 Daily Mean Discharge
(In cubic feet per second)

FRENCH CREEK ABOVE NORTH FORK FRENCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1						6.7	4.3
2						6.7	4.3
3						6.4	4.1
4						6.1	4.0
5						6.1	4.0
6						5.8	4.0
7						5.6	4.0
8						5.4	4.0
9						5.2	4.0
10						5.0	4.0
11						4.7	4.0
12						4.4	4.0
13						4.3	4.0
14						4.3	4.0
15					23	4.3	4.0
16					27	4.2	3.9
17					31	4.2	3.8
18					23	4.1	4.1
19					20	4.1	4.2
20					17	4.1	4.1
21					15	4.1	4.0
22					14	3.9	4.0
23					13	3.9	4.0
24					12	3.9	4.0
25					11	3.9	4.0
26					10	3.8	4.0
27					9.0	3.8	3.9
28					8.5	3.9	3.9
29					8.2	4.0	3.9
30					8.2	4.2	3.9
31					7.0	5.0	
MEAN					15.1	4.7	4.0
AC-FT					510	290	240

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River service area is in the central part of Siskiyou County. Willow Creek and Cold Creek were changed from the Klamath River watermaster service area to the Shasta River watermaster service area in 1983.

The water supply comes from Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of Interstate 5, rises on the eastern slopes of the Trinity Mountains. All these streams join the mainstem Shasta River above Lake Shastina (Dwinnell Reservoir) near the town of Weed. As the Shasta River flows northward from Lake Shastina to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

Shasta Valley is about 30 miles long and 30 miles wide. In the center of the valley are many small, cone-shaped, volcanic hillocks that divide the area into separate parts. Because of these formations, only about 141,000 acres of about 507,000 acres in the valley are irrigable. The valley floor elevation averages about 3,000 feet.

Willow Creek is in Siskiyou County, about 10 miles northeast of Montague. It is the major source of water and rises on the west slope of the 7,800-foot Willow Creek Mountain, east of the service area. It flows northwest through about 11 miles of rolling hills to its confluence with the Klamath River. The Willow Creek area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Cold Creek is just south of Copco Lake, a hydroelectric power reservoir on the Klamath River in the extreme northern part of Siskiyou County. Yreka is 30 miles southwest of the Cold Creek stream system.

Elevations within the Cold Creek watershed range from 2,900 feet to about 6,500 feet.

Maps of the major stream systems in the Shasta River service area are presented as Figures 13 through 13i, pages 153 through 171.

Shasta River

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory

adjudication that resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree lists the water rights of the entire stream system by the names of the users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek, 43 priorities; Boles Creek, 20 priorities; Beaughan Creek, 5 priorities; Jackson Creek, 7 priorities; Carrick Creek, 13 priorities; Parks Creek, 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries, 29 priorities; and Little Shasta River, 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Lake Shastina. By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users. A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the Lower Shasta River. Owners of these rights are not subject to watermaster supervision, causing considerable distribution problems during seasons of short water supply.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several parts of the stream system, the springs from underground flow are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, which rises 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is little surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River get much of their water from snowmelt runoff, usually enough to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Lake Shastina, Big Springs, and Lower Shasta River have enough runoff from springs to supply many of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are in Tables 73 through 75 pages 173 through 175, and Table 77, page 176. The daily mean storage in Lake Shastina is in Table 76, page 176.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is mainly by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is routed by diversion dams and then carried by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cfs and a length of about 14 miles. Water is also supplied to ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users association. Some riparian lands are also served by pump diversions.

There are many privately owned storage reservoirs in the area. Water from these reservoirs supplements continuous-flow allotments.

Because of their large rights, close surveillance of the two public agencies, Grenada and Big Springs Irrigation Districts, and the privately operated Shasta River Water Users Association, is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam.

1984 Distribution

Watermaster service began April 1 in the Shasta River service area and continued through September 30 with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The water supply in the service area was above average during the season.

Parks Creek. The flow in Parks Creek was enough to supply all priorities, including water to Montague Water Conservation District Bypass Canal to the Shasta River, until June 15. The flow diminished until the second priority allotments of 6 cfs were at 90 percent by the end of July and remained that for the rest of the season.

Water users downstream from the third and fourth priorities got part of their allotments during the latter part of the season from return flow and from water rising in the streambed.

Upper Shasta River. The flow in the Shasta River was enough to fill all priorities until the first week of July. By July 12, the river was down to fourth priorities and all of the water was turned into the Yreka Ditch. The flow declined until Yreka Ditch users were only getting 55 percent of their rights. It stayed that way for the rest of the season.

Lower priority users got only part of their rights below the Yreka Ditch, from return flow and channel increase.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir). Boles Creek and this part of the Shasta River were operated as one stream under a longstanding oral agreement among the water right owners. The water is distributed on a correlative, equal-priority basis. By the end of July, all water rights were set at 100 percent of their allotments and stayed that way the rest of the season. The Roseburg Lumber Company did not use their full allotment this season, so more water was available for the other users.

Beaughan Creek. The flow at Beaughan Creek was enough for all demands (five priorities) for the entire season.

Carrick Creek. The water supply in Carrick Creek was enough to satisfy all allotments (13 priorities) during the entire season.

Little Shasta River. There was enough water in the Little Shasta River to satisfy five priority allotments (seven priorities in all) until July 9, when full regulation became necessary. The flow continued to decrease to 60 percent of fifth priority allotments by August 20, then stayed constant for the rest of the season.

Dwinnell Reservoir. Releases from Lake Shastina (Dwinnell Reservoir) to the Montaque Water Conservation District began on April 2 and continued into October. By agreement with the Montaque Water Conservation District, water users on the Shasta River below Dwinnell Reservoir got stored water from the reservoir on demand instead of their natural flow rights. The agreed allotment totals and the amount delivered to each user this season are shown on Table 72, page 172

Big Springs Lake. Big Springs irrigation district did not pump from Big Springs Lake this year, as they have gone to pumping ground water. There was a surplus in Big Springs Lake until July 1. On July 12 the flow of the springs was 10 cfs, filling only the first priority out of the lake. On September 5, the springs were back up to 23 cfs, more than enough to fill first and second priorities.

Lower Shasta River. The water supply in the lower Shasta River was enough to satisfy all allotments (29 priorities) all season.

Willow Creek

Basis of Service

Willow Creek has had a long history of litigation. The present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, Klamath River Watermaster Service Area (formerly Willow Creek Watermaster Service Area) was created on June 22, 1972, and service began on July 1, 1972.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply

The main source of water for the Willow Creek stream system is from snow that accumulates at high elevations on the drainage area during the winter months.

The spring flow from the melting snow begins late in March or early April and is almost entirely gone by June. Thereafter, the streamflow decreases rapidly until about July 5. From then until rainy season begins, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stockwatering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Klamath River service area. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. Water is diverted into ditches by temporary rock or gravel dams. The lower user in the area uses both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1984 Distribution

Watermaster service in the Willow Creek service area began on April 1 and continued until September 30 with Lester L. Lighthall, Water Resources Technician II as watermaster during this period.

Since watermaster service began in 1972 on this creek, no recorder has been installed. However, the water users indicated that the supply was above average.

There was sufficient water to distribute to all three users according to their fractional allotments until July 15 when distribution was started on a five-day rotation between the two upper users. This rotation continued for the rest of the season.

In our twelve years of record, the average starting date for rotation was July 19. This year, rotation started on July 15 since the water supply was above average. The diversions were as follows:

Diversion Number

1	More and Sylva
1a	More pipeline
2,3	Sylva upper and lower ditch
5,6	Cook upper and lower ditch

Cold Creek

Basis of Service

A statutory adjudication of Cold Creek in 1978 ordered the Department of Water Resources to provide watermaster service at Diversions 2, 3, and 4, and at the diversion weir on the Silva-Lennox Ditch. Watermaster service began April 1, 1981.

Water Supply

The water supply of the Cold Creek stream system usually satisfies requirements until July.

Method of Distribution

Both sprinkler and flood irrigation are used in Cold Creek service area.

1984 Distribution

Watermaster service on Cold Creek began April 1, and continued through September 30, with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The flow in Deer Creek above Diversion 21 receded to less than 1.02 cfs in early July. When the flow in Deer Creek above Diversion 21 recedes to 1.02 cfs or less, diversion into the Silva-Lennox ditch is increased to a maximum of 3.93 cfs as measured at the diversion weir.

At no time during the 1984 irrigation season was the flow sufficient at Diversion 2 for any diversion into the East Fork of Cold Creek.

TABLE 62

ALLOTMENTS TO CLAIMANTS UNDER WATERMASTER SERVICE FROM
UPPER PORTION OF THE COLD CREEK STREAM SYSTEM

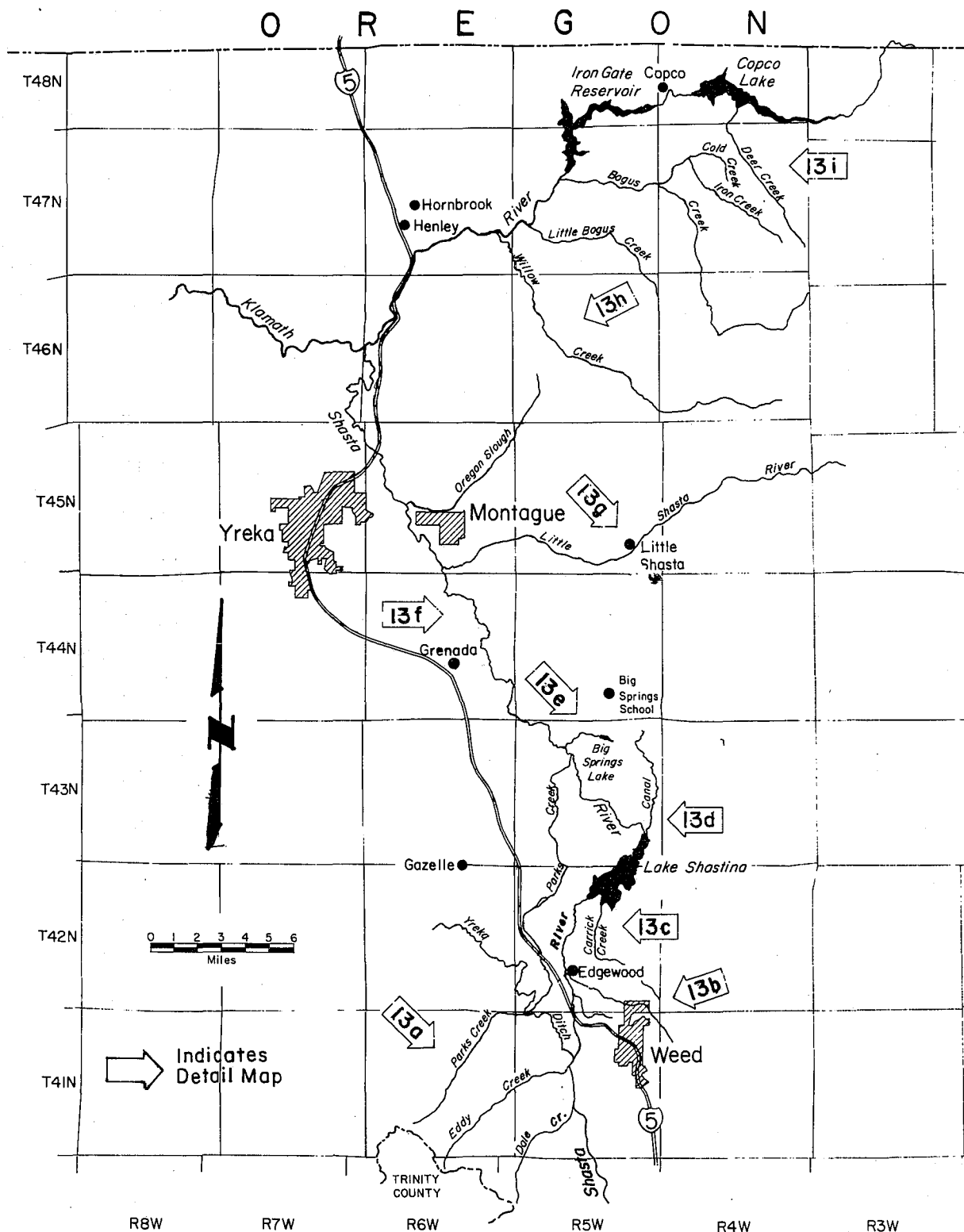
Name of Claimant	: Diversion :		: Area :	: Allotments by Priority :			: Total
	: No. on	: Use		: Served	: in Cubic Feet per Second	: Amount	
	: SWRCB Map :		: Acres :	1st	2nd	3rd	
Lemos	1 and 2	Irr. and Power	160	3.20a/			3.20
O'Neill	1 and 2	Irr.	6	0.18a/			0.18
Fogarty	1 and 2	Irr.	20	0.55a/			0.55
Boos	3 and 4	Irr.	125		2.50b/		2.50

a/ Silva-Lennox Ditch. During the irrigation season the flow in the Silva-Lennox Ditch as measured at the division weir shall be limited to 2.91 cfs when the flow in Deer Creek above Diversion 21 exceeds 1.02 cfs. When the flow in Deer Creek above Diversion 21 recedes to 1.02 cfs or less, diversion into the Silva-Lennox Ditch may be increased to a maximum of 3.93 cfs as measured at the division weir.

Flow in the Silva-Lennox Ditch shall be divided at the division weir as follows: when the flow is 2.91 cfs or less, it shall be divided 1/4 to the O'Neill-Cobb lateral and 3/4 to the Lemos lateral; when the flow is more than 2.91 cfs, it shall be divided 0.73 cfs to the O'Neill-Cobb lateral and all other flows to the Lemos lateral.

b/ High Ditch and Low Ditch. Carter, Lucia, Boos, and B. Clifford are entitled to intercept and divert from Springs No. 3 and No. 4 up to 4.16 cfs into the High Ditch between Diversion Points 6 and 3 as set forth in Schedule D for domestic and stockwatering purposes and for irrigation of lands as set forth in Schedule A. The High Ditch begins at Diversion 6 and extends northeastward crossing Cold Creek and, being augmented thereby at Diversion 3, continues northwestward to its end in the southwest quarter of Section 5. On a continuous flow basis, the combined allotment for Boos and B. Clifford at Diversions 3 and 4 shall not exceed 2.52 cfs.

Figure 13



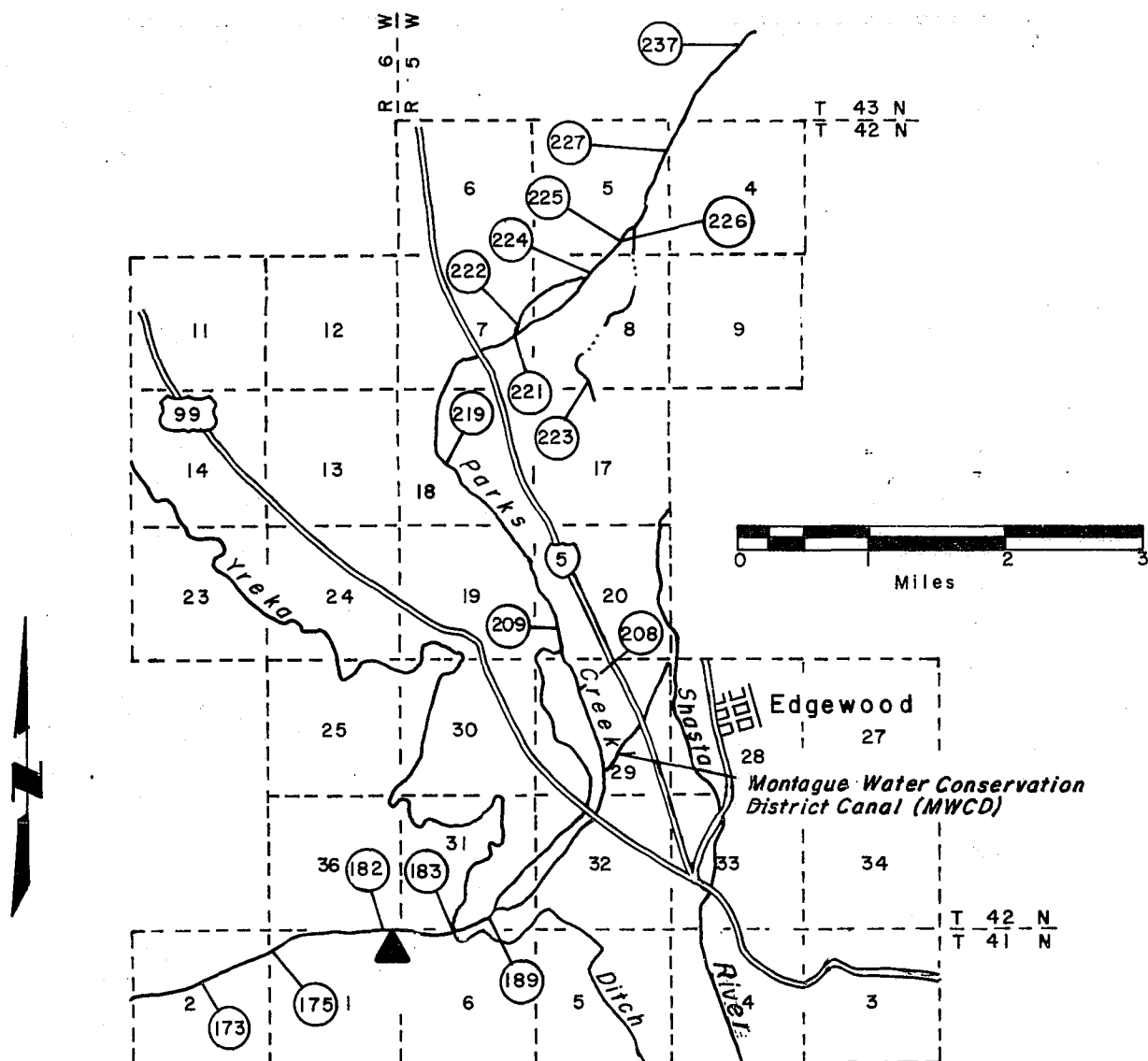
INDEX MAP SHASTA RIVER
WATERMASTER SERVICE AREA

TABLE 63
DIVERSIONS FROM PARK CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
173	Vanderbilt	0.70
175	Vanderbilt	1.275
182	Duke, North	<u>1/</u>
183	Yreka Ditch	15.20
189	Duke, South	<u>1/</u>
221-227	Gragnani	17.20
208	Lemos, Bettencourt	1.40
209	Bettencourt	0.90
219-220	Bettencourt	0.85
237	Cardoza	2.98

1/ Allotment of 6.00 cfs in either ditch.

Figure 13a



▲ Watermaster installed recorder station.

DIVERSIONS FROM PARKS CREEK, SHASTA RIVER WATERMASTER SERVICE AREA

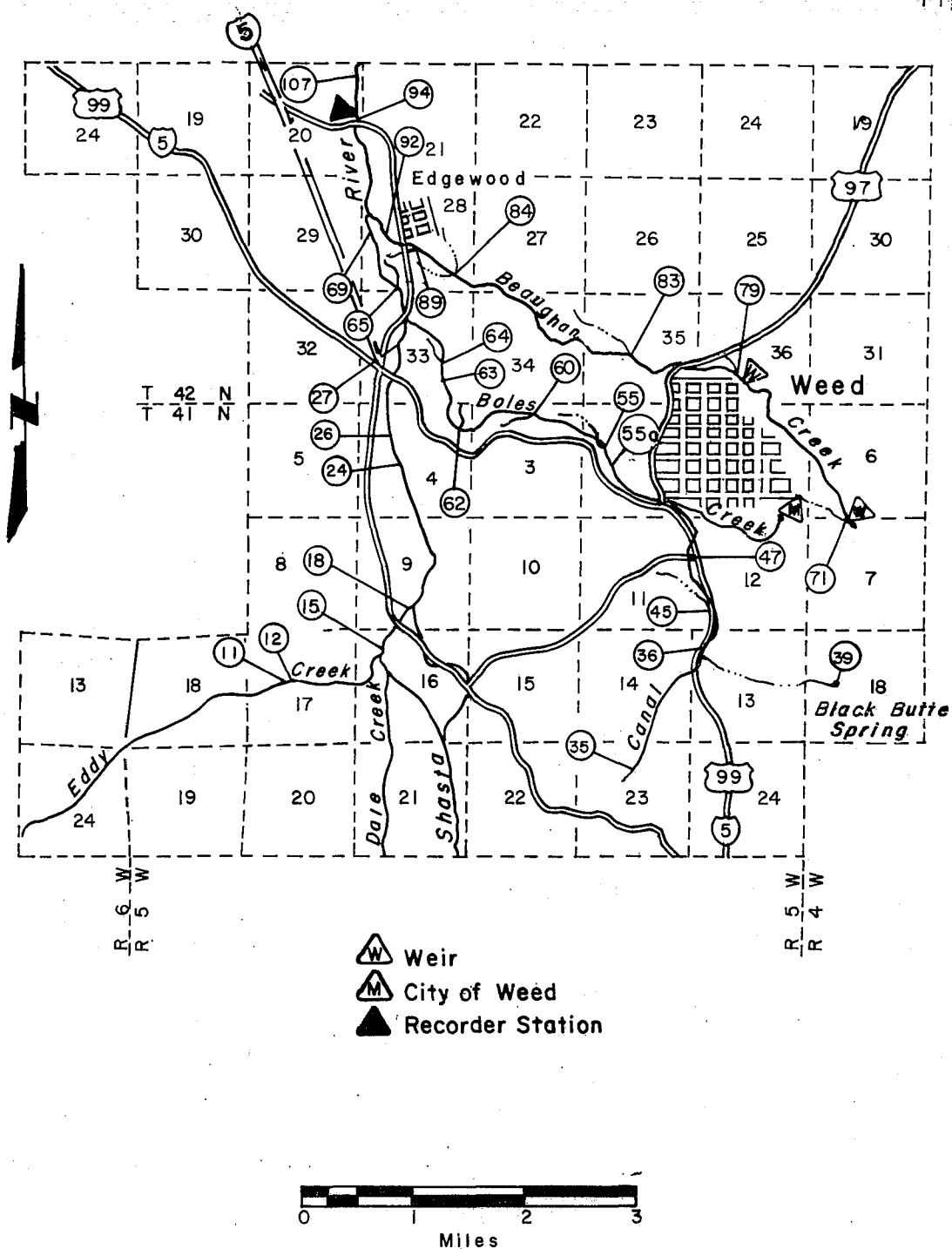
TABLE 64

DIVERSIONS FROM SHASTA RIVER, BEAUGHAN CREEK AND BOLES CREEK

Diversion

<u>Number</u>	<u>Name</u>	<u>cfs</u>
11-16	Dow Ditch	1.55
12	Hammond-Scott Ditch	9.36
15	Dobkin Ditch	0.60
18	Yreka Ditch	30.00
24	Parker	0.40
26	Mazzini, Mole Richardson Co.	6.21
27	West Neal Ditch	1.00
35	Larson, Meadows, Kenny	0.40
36	International Paper Company	4.00
39	Black Butte Spring	0.50
45	Thompson Ditch	1.05
47	Sullivan Ditch	0.30
55	Salanti Ditch	1.00
55A	Weed Golf Course	0.65
60	Davidson Ditch	0.25
62	Belcastro Ditch	0.10
63	Upper Lemos Ditch	2.60
64	Lower Lemos Ditch	2.06
65	East Neal Ditch	0.80
69	Alexander Ditch	1.60
71-78	Roseburg Lumber Company	4.07
79	Linville	0.45
83	Belcastro	0.55
84-87	Jackson, Freeze, Farmsworth	3.87
89	Ordway	0.40
92	Ordway	0.86
94	Davis	0.65
107-115	Mills Ranch	10.45

Figure 13b

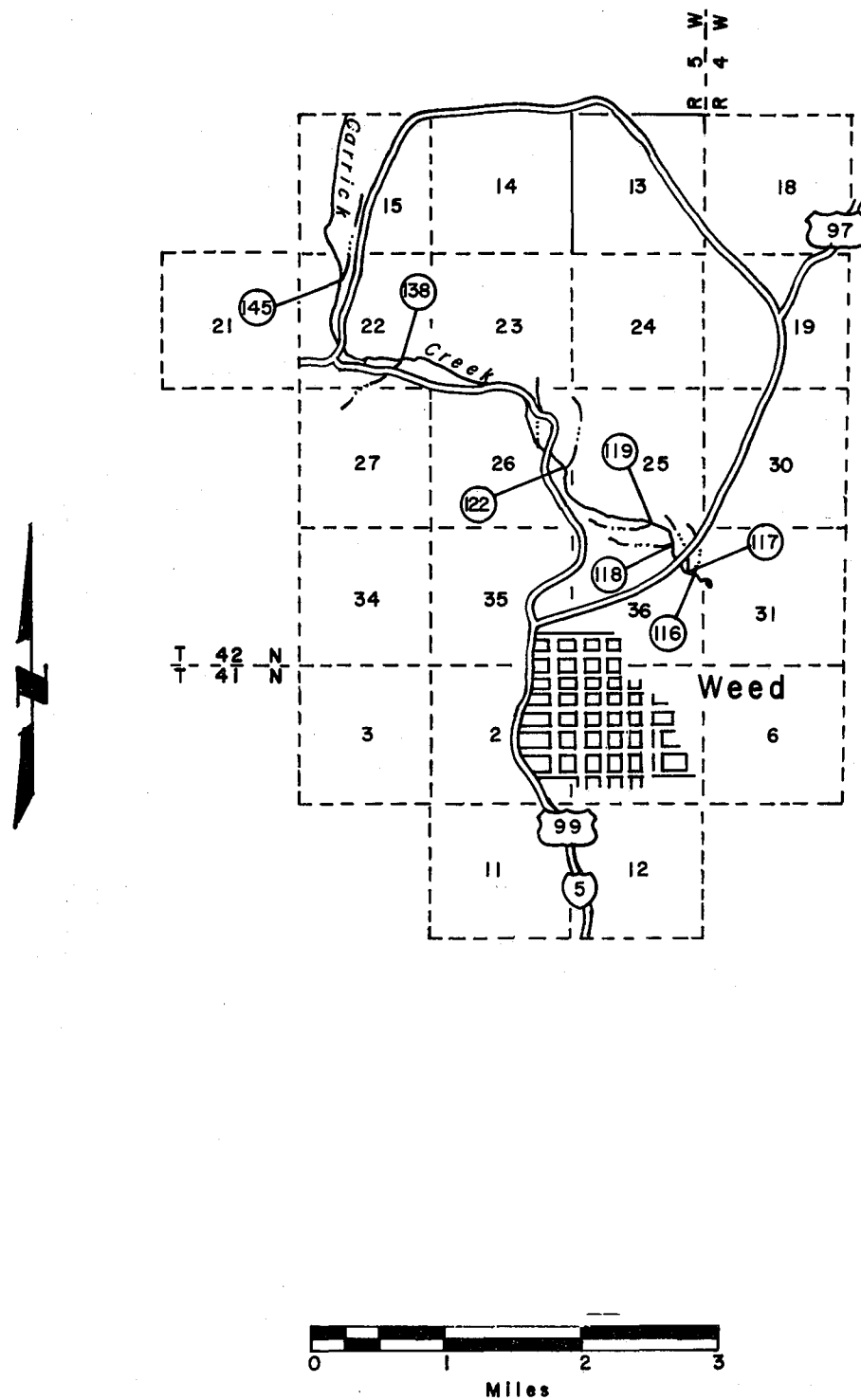


DIVERSIONS FROM SHASTA RIVER
BEAUGHAN CREEK AND BOLES CREEK,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 65
DIVERSIONS FROM CARRICK CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
116	Zwanziger	2.20
117	Goltz	2.20
118	Belcostro-Luiz	0.40
119	Luiz	0.40
122	Hoy	0.86
138	Jackson	1.20
145	Mills	1.10

Figure 13c



DIVERSIONS FROM CARRICK CREEK
SHASTA RIVER WATERMASTER SERVICE AREA,

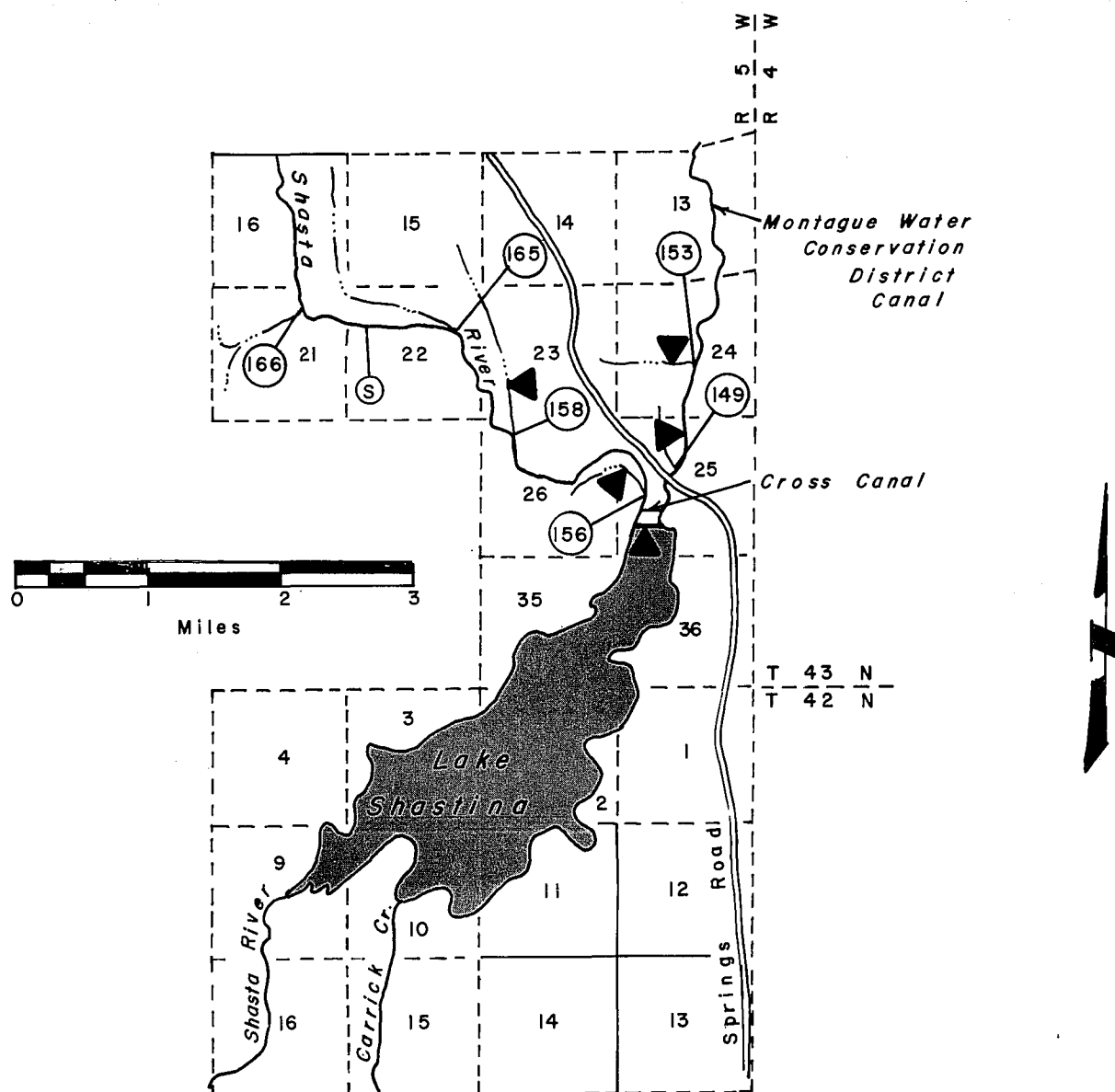
TABLE 66

PRIOR RIGHTS BELOW LAKE SHASTINA
(DWINNELL RESERVOIR)

<u>Diversion Number</u>	<u>Name</u>	<u>Ac/ft</u>
149	Flying L Ranch	198
153	Taylor Ranch	1,200
156	Seldom Seen Ranch	924
158	Hidden Valley Ranch	464
165-166 ^{1/}	Hole-in-the-Ground Ranch	596
S	Clear Spring	2.5 cfs

^{1/} 2 pumps

Figure 13d



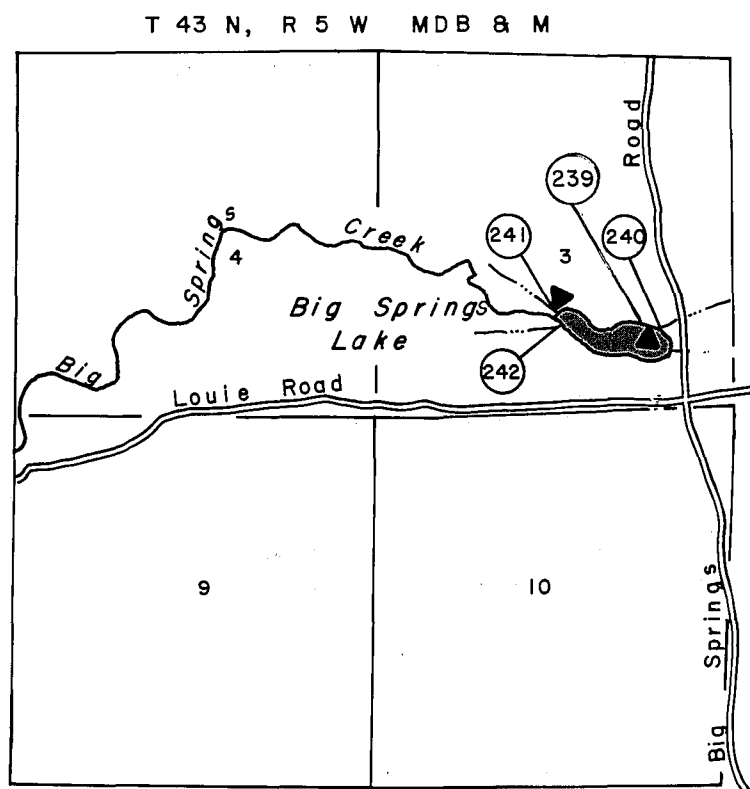
▲ Watermaster - installed recorder station.

PRIOR RIGHTS BELOW LAKE SHASTINA,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 67
DIVERSIONS FROM BIG SPRINGS LAKE

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
239	Newton, pump	7.50
240	Big Springs I.D.	30.00
241-242	E. Louie Ditch	10.00

Figure 13e



▲ Watermaster - installed recorder station



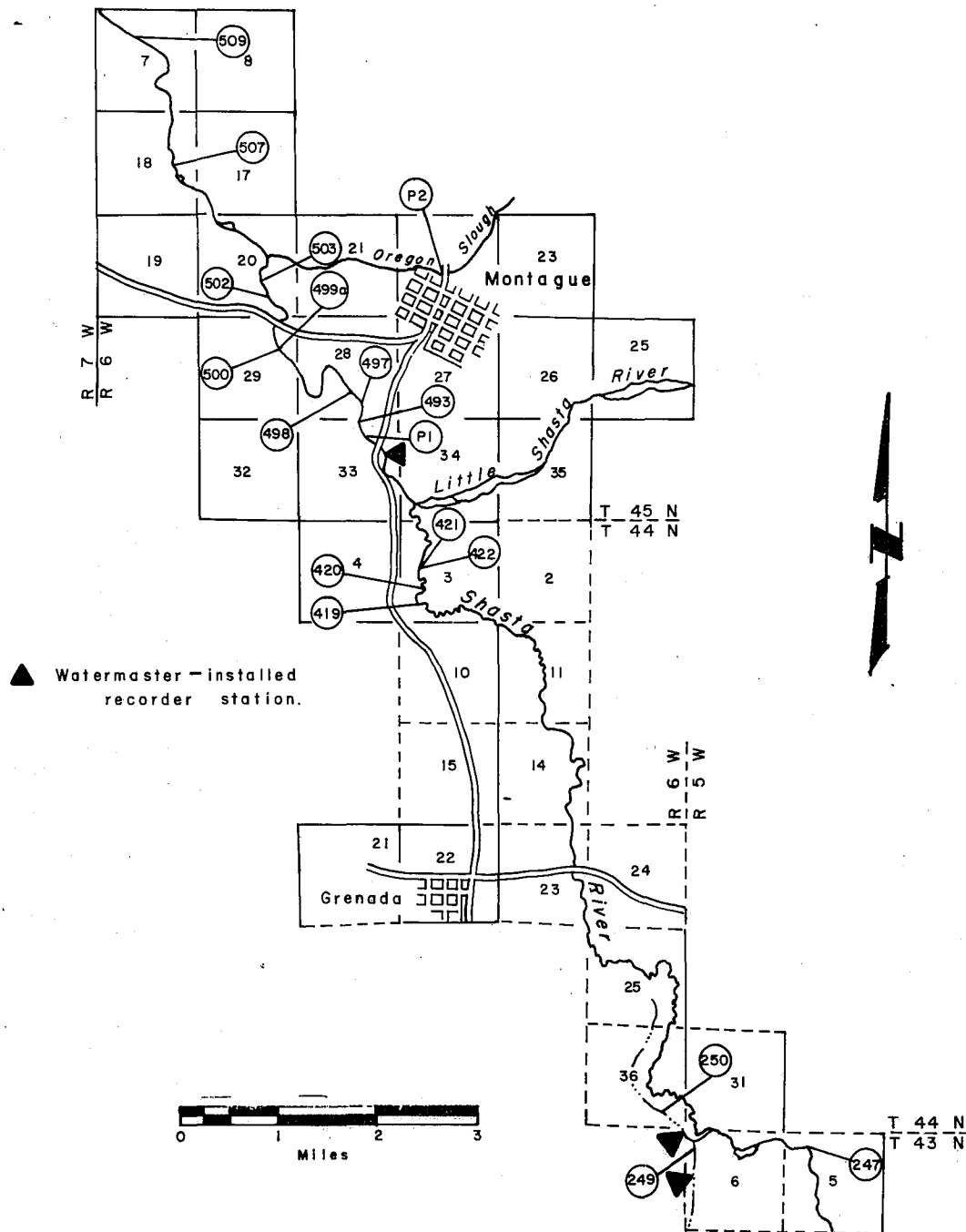
DIVERSIONS FROM BIG SPRINGS LAKE,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 68
DIVERSIONS FROM LOWER SHASTA RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
247	Nelson (pump)	2.37
249	Grenada Irrigation District Pumps	40.00
250	Huesman Ditch	10.91 ^{1/}
419	Shasta River Water Users Association Pumps	42.00
420	Banhart	0.20
421,422	Kuck	2.25
493	Easton	0.10
497	Flock (pump)	3.96
498	Flock	1.20
499a,500	Lemos	0.70
502	Flock-Alley	3.80
503	Flock	5.90
507	Flock	0.25
509	Mosely - Johnson	1.75
P1	Meamber (pump)	0.22 ^{1/}
P2	Meamber (pump)	1.00

^{1/} Plus undefined riparian rights

Figure 13f

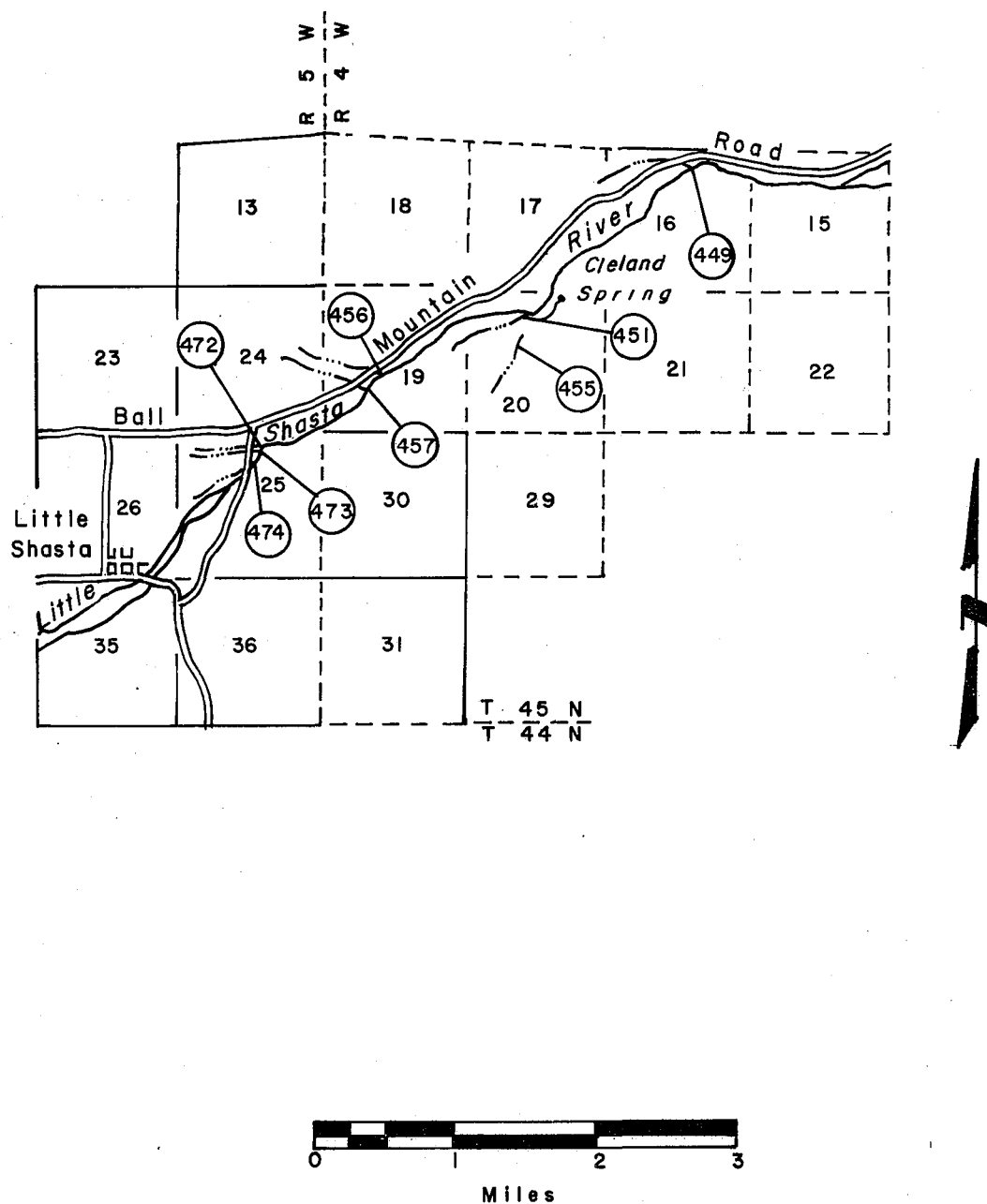


DIVERSIONS FROM LOWER SHASTA RIVER, SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 69
DIVERSIONS FROM LITTLE SHASTA RIVER

<u>Diversion Number</u>	<u>Ditch</u>	<u>cfs</u>
449	Harp Ditch	1.60
451	Terwilliger Ditch	1.12
455	Martin Ditch	6.00
456	Dimmick Ditch	0.12
457	S & T Ditch	6.60
472	M & L Ditch	19.60
473	BMS Ditch	7.19
474	HHP Ditch	10.00

Figure 13g



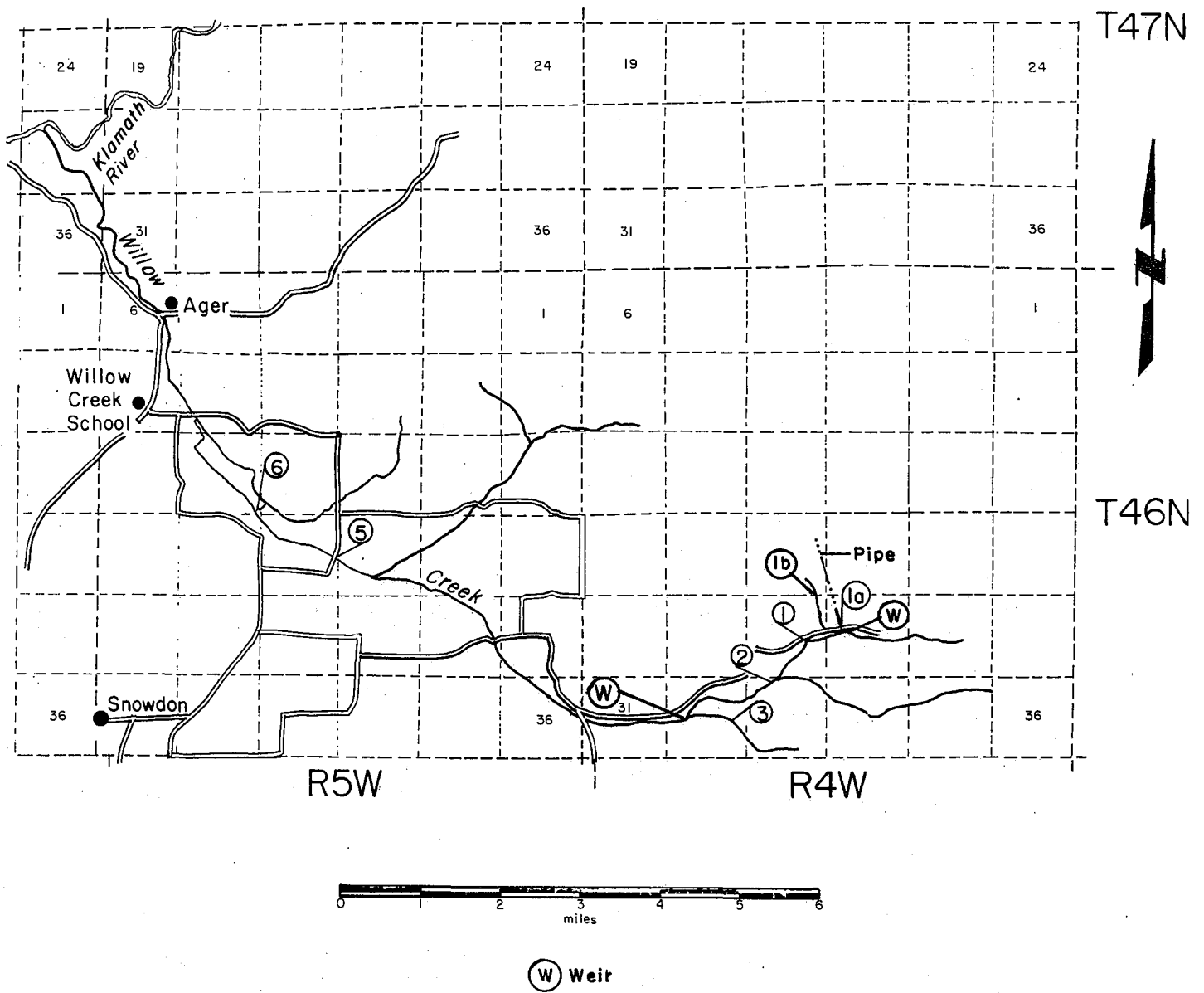
DIVERSIONS FROM LITTLE SHASTA RIVER,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 70

DIVERSIONS FROM WILLOW CREEK

<u>Division Number</u>	<u>Name</u>	<u>Allotment</u>
1a	Guardia Pipe	1/6 of flow in Willow Creek above Guardia Pipe.
1b	Thomason Ditch	
1	Sylva Upper Ditch	1/6 of flow in Willow Creek above Guardia Pipe.
2	Sylva Lower Ditch	
3	Sylva South Fork Ditch	All of South Fork Willow Creek.
5	Cook Upper Ditch	2/3 of the flow in Willow Creek above Guardia Pipe. Measured at Sylva's west line.
6	Cook Lower Ditch	

Figure 13h



DIVERSIONS FROM WILLOW CREEK,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 71
DIVERSIONS FROM COLD CREEK

<u>Diversion Number</u>		<u>cfs</u>
1-2	Measured at the division weir of the Silva-Lennox Ditch.	2.91 ^{a/} 3.93 ^{b/}

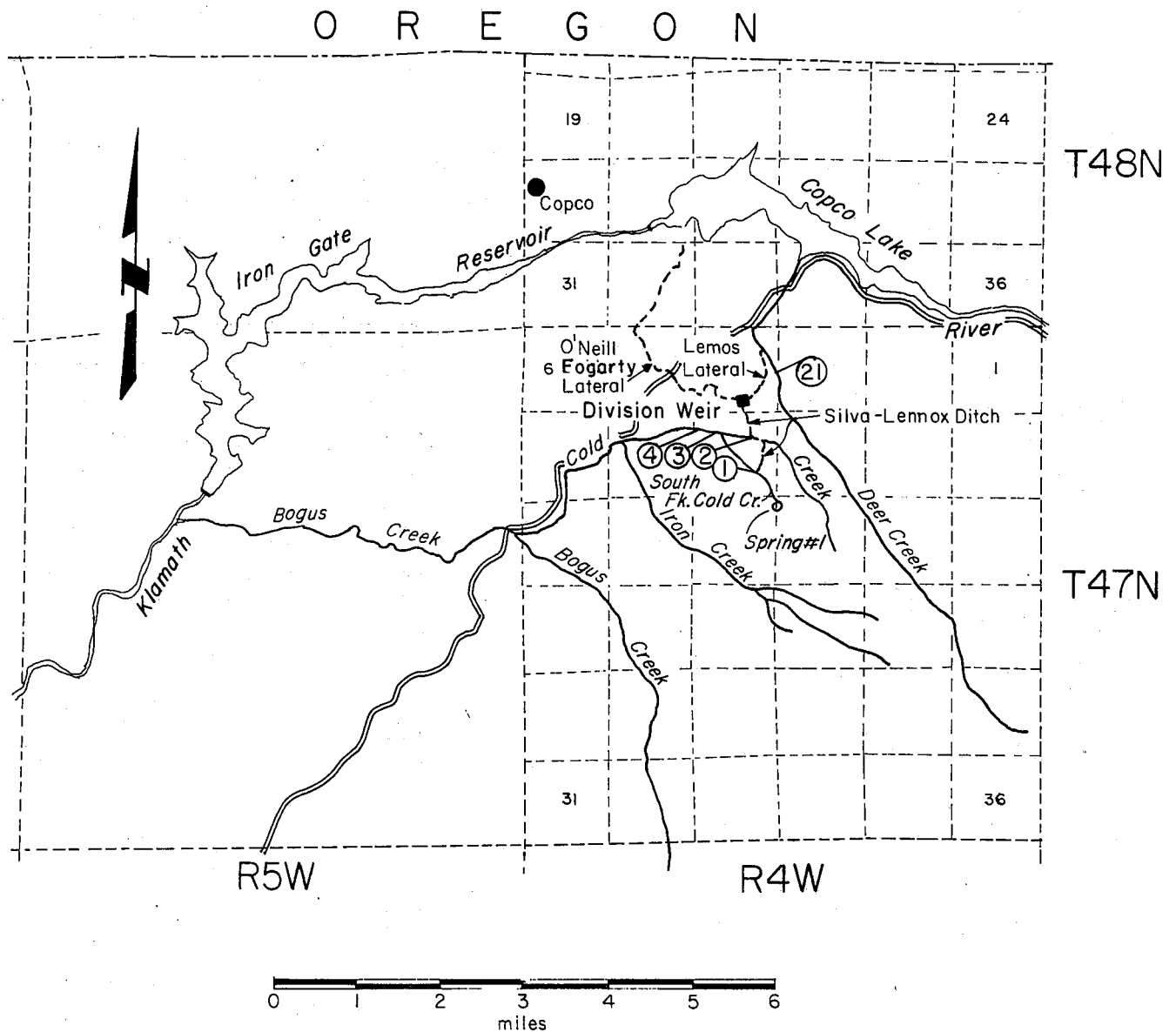
When the flow is 2.91 cfs or less it shall be divided 1/4 to the O'Neil-Cobb lateral and 3/4 to the Lemos lateral.

When the flow is more than 2.91 it shall be divided 0.73 cfs to O'Neil-Cobb lateral and all other flow to the Lemos lateral.

a/ At all times that the flow in Deer Creek above Diversion No. 21 exceeds 1.02 cfs.

b/ When flow is less than 1.02 cfs in Deer Creek above Diversion No. 21.

Figure 13i



DIVERSIONS FROM COLD CREEK,
SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 72

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS
BELOW DWINNELL RESERVOIR - 1984

Name of Water Right Owner	Allotment in	Allotment Delivered From Dwinnel Reservoir	
	A/F	A/F	: % of Allotment
Flying L Ranch (Gragnani)	198	198	100
Hole-in-the-Ground Ranch (Gragnani)	596	527	89
Seldom Seen Ranch (Gragnani)	924	100	11
Taylor Ranch (Taylor)	1,200	1,044	87
Hidden Valley Ranch (Overturf)	464	0	0
Totals	3,382	1,869	

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 73

1984 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	329	364	183	138	46	45	144
2	330	354	180	132	50	50	114
3	324	320	183	127	44	47	82
4	315	342	187	128	38	32	73
5	300	360	182	133	36	28	68
6	299	376	171	140	35	30	71
7	299	345	165	135	33	27	68
8	299	356	169	134	42	20	87
9	295	348	159	126	57	18	66
10	295	321	157	119	44	23	72
11	294	312	172	113	38	19	76
12	293	300	192	104	34	18	79
13	308	277	205	101	32	23	75
14	330	267	204	100	36	21	69
15	319	258	202	92	40	21	89
16	321	256	193	98	41	26	88
17	335	248	177	79	41	28	82
18	343	247	164	75	39	29	83
19	347	228	164	73	70	29	79
20	347	228	163	71	61	32	88
21	362	228	164	67	49	31	91
22	361	222	161	76	49	35	94
23	342	222	155	80	51	35	94
24	346	209	160	84	48	36	89
25	362	195	153	84	41	43	89
26	406	184	142	70	36	41	98
27	426	184	153	65	48	42	107
28	351	180	153	71	40	39	101
29	327	172	149	56	62	46	104
30	314	174	144	40	55	64	105
31	333		142		47	55	
MEAN	331	269	169	97	44.6	36.5	87.5
AC-FT	20330	16020	10410	5770	2740	2250	5210

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 74

1984 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	87	86	40	113	37	7.4	28
2	86	79	43	95	34	8.4	23
3	85	73	53	87	30	10	19
4	84	73	59	86	30	12	16
5	84	86	56	83	28	14	14
6	83	105	52	87	27	12	14
7	86	93	51	86	25	11	14
8	89	105	62	71	22	12	14
9	93	101	85	60	18	11	13
10	95	94	80	54	14	12	14
11	97	89	135	50	13	10	14
12	95	83	178	44	12	11	14
13	199	78	167	43	11	10	14
14	206	75	159	42	12	9.7	15
15	204	92	126	42	11	7.5	18
16	186	115	100	51	12	6.8	18
17	162	116	85	53	14	8.1	16
18	139	114	74	54	18	11	14
19	124	105	81	59	26	11	13
20	117	92	115	58	22	11	17
21	120	82	106	53	19	7.8	21
22	116	77	102	47	18	7.0	20
23	109	85	122	43	16	7.6	21
24	103	86	123	41	13	7.2	19
25	99	80	147	41	12	9.9	17
26	100	74	158	42	13	9.8	20
27	100	66	144	43	12	8.9	22
28	94	57	119	45	11	9.2	22
29	84	47	134	46	10	7.3	21
30	77	36	154	41	10	20	22
31	86		141		8.9	49	
MEAN	112.5	84.8	104.9	58.7	18	11.3	17.6
AC-FT	6920	5050	6450	3490	1110	690	1050

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 75

1984 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			42	55	12	3.0	4.7
2			45	48	11	2.6	4.2
3			58	45	19	2.6	3.7
4			58	43	9.2	2.6	3.4
5			55	40	9.2	2.6	3.4
6			53	39	8.4	2.4	3.4
7			58	35	7.8	2.4	3.4
8			90	33	7.2	2.4	3.4
9			97	33	7.2	2.4	3.4
10			94	31	6.6	2.3	3.4
11			190	31	6.6	2.3	3.4
12			190	29	6.2	2.3	3.4
13			183	29	6.2	2.3	3.4
14			142	29	6.2	2.3	3.4
15			94	29	6.2	2.3	3.4
16			70	29	6.2	2.3	3.9
17			63	28	6.2	2.3	4.4
18			70	25	6.2	2.3	3.9
19			90	21	6.2	2.3	3.2
20			94	21	7.2	2.3	3.2
21			88	20	5.8	2.3	3.2
22			94	18	5.4	2.1	3.2
23			109	17	4.7	2.1	3.2
24			88	16	4.2	2.1	3.2
25			88	15	3.2	3.0	3.2
26			88	14	3.2	4.2	3.0
27			82	14	3.9	3.4	3.0
28			94	14	3.9	2.8	3.0
29			109	13	3.9	2.8	3.0
30			109	13	3.7	7.2	3.0
31			74		3.4	14	
MEAN			92.2	27.6	6.0	3.0	3.4
AC-FT			5670	1640	372	187	209

SHASTA RIVER WATERMASTER SERVICE AREA
Water Year 1983-84

TABLE 76

LAKE SHASTINA (DWINNELL RESERVOIR)
DAILY MEAN STORAGE IN ACRE FEET

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	30,032	28,700	34,596	42,618	44,980	48,040	50,416	48,958	45,826	39,651	30,336	22,718
2	29,920	28,914	34,686	42,554	45,016	48,076	50,380	48,652	45,700	39,294	30,080	22,620
3	29,808	28,978	34,936	42,490	45,070	48,130	50,308	48,400	45,556	39,039	29,808	22,480
4	29,680	29,000	35,106	42,490	45,160	48,166	50,236	48,200	45,448	38,784	29,480	22,368
5	29,578	29,032	35,260	42,538	45,250	48,220	50,164	48,040	45,340	38,495	29,300	22,256
6	29,482	29,080	35,430	42,586	45,304	48,274	50,056	47,860	45,160	38,189	28,925	22,158
7	29,396	29,080	35,800	42,677	45,376	48,328	50,074	47,680	45,070	37,900	28,745	22,060
8	29,300	29,096	36,062	42,729	45,466	48,400	50,074	47,500	44,908	37,594	28,505	21,962
9	29,262	29,182	36,960	42,745	45,556	48,454	50,074	47,374	44,764	37,254	28,250	21,850
10	29,080	29,600	37,900	42,762	45,664	48,544	50,146	47,266	44,620	36,931	27,950	21,710
11	29,000	30,400	38,490	42,777	45,754	48,616	50,200	47,148	44,530	36,625	27,690	21,542
12	28,930	30,720	39,430	42,915	45,880	48,706	50,200	47,320	44,260	36,285	27,395	21,360
13	28,850	31,200	39,802	43,054	45,970	48,850	50,200	47,392	44,008	35,945	27,125	21,220
14	28,796	31,568	40,020	43,144	46,240	49,210	50,200	47,428	43,864	35,605	26,855	20,968
15	28,732	31,760	40,190	43,234	46,456	49,480	50,200	47,410	43,648	35,282	26,600	20,898
16	28,678	32,000	40,360	43,360	46,528	49,660	50,290	47,320	43,450	34,976	26,300	20,772
17	28,630	32,400	40,620	43,450	46,690	49,840	50,398	47,194	43,216	34,670	26,015	20,562
18	28,550	32,640	40,790	43,558	46,780	49,966	50,470	46,996	43,108	34,364	25,760	20,476
19	28,512	32,970	40,918	43,684	46,870	50,056	50,470	46,780	42,915	34,075	25,505	20,338
20	28,448	33,140	41,088	43,810	47,014	50,164	50,470	46,672	42,660	33,735	25,250	20,240
21	28,400	33,310	41,300	43,936	47,194	50,272	50,452	46,546	42,388	33,395	24,980	20,156
22	28,394	33,422	41,348	44,080	47,374	50,380	50,416	46,420	42,000	32,970	24,725	20,030
23	28,394	33,650	41,550	44,170	47,500	50,416	50,380	46,294	41,844	32,800	24,440	19,932
24	28,400	33,820	41,720	44,296	47,590	50,326	50,200	46,204	41,589	32,512	24,170	19,834
25	23,400	34,022	41,980	44,386	47,680	50,290	50,038	46,150	41,300	32,240	23,900	19,736
26	28,400	34,160	42,920	44,494	47,770	50,254	49,858	46,114	41,045	31,920	23,600	19,638
27	28,432	34,240	43,196	44,566	47,860	50,290	49,678	46,078	40,790	31,712	23,390	19,568
28	28,464	34,346	43,112	44,638	47,932	50,308	49,498	45,988	40,535	31,440	23,110	19,498
29	28,480	34,442	43,080	44,728	47,968	50,290	49,300	45,934	40,246	31,200	22,900	19,428
30	28,550	34,500	43,000	44,818		50,272	49,120	45,916	39,940	30,912	22,844	19,330
31	28,582		42,830	44,890		50,362		45,898		30,640	22,788	

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 77

1984 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		306	158	144	43	45	137
2		298	162	141	43	40	100
3		279	162	137	43	34	67
4		298	168	137	41	26	61
5		298	165	144	41	27	61
6		306	151	148	43	24	61
7		290	148	144	45	20	74
8		298	151	141	55	23	74
9		290	130	130	58	23	67
10		267	137	127	41	19	71
11		260	148	117	38	19	74
12		245	182	117	34	23	77
13		234	190	124	36	24	67
14		234	193	110	34	23	74
15		226	193	103	34	24	90
16		219	179	90	40	26	90
17		208	165	71	36	27	90
18		197	162	71	51	22	90
19		193	162	77	61	27	90
20		183	162	64	45	29	94
21		183	162	67	40	34	100
22		183	154	77	45	34	100
23		176	158	84	45	38	97
24		162	162	90	40	38	94
25		158	151	74	33	38	100
26		158	151	61	41	38	113
27		151	158	67	40	34	113
28		144	151	58	40	34	103
29		151	148	38	48	43	103
30		158	148	40	45	71	103
31			151		36	179	
MEAN		225	160	107	42.4	35.7	87.8
AC-FT		13390	9840	6350	2610	2190	5230

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is in Modoc County, east of the Warner Mountains. Figure 14, page 183, shows the service area, the streams serving it, and the towns and roads of the valley.

Ten individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These are fed by snowmelt runoff and run in fast, steep courses down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939 and includes Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, all of which once had individual watermaster service. Service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960 and Cottonwood Creek was added in 1977. Each of the ten stream systems is under separate decrees. See Table 78, page 182, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply comes almost entirely from snowmelt, with only minor spring-fed flows occurring late in the season. Due to the steep eastern slope of the Warner Mountains, there are no likely storage sites on the service-area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. Wide daily temperature changes cause great changes in the rate of snowmelt runoff. This situation is worsened by the relatively short, steep drainage area. Also, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes can cause considerable damage from washouts and debris deposition but are of such short duration that little or no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 90 through 101, pages 206 through 217.

Method of Distribution

Continuous-flow distribution is used on most creeks, but water is rotated among some users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most use pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been stressed in recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do help a lot in solving water measurement and distribution problems. The individual streams and locations of the diversions are shown in Figures 14 through 14k, pages 183 through 205.

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the District's diversion and distribution project was completed in February 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and fairer. The users say that they received twice as much water as they did before the project. It is possible to divert and distribute 80 cfs in the lower seven ditches.

1984 Distribution

Watermaster service began in the Surprise Valley area on March 19 and continued until September 30, with Keith Dick, Water Resources Technician II, as watermaster.

Bidwell Creek

Total stream runoff available from April 1 through September 30 was 27,190 acre-feet. There was water in May and June, with most of the water reaching the lake. Two diversions still remained unusable from 1973 flooding. Due to a good water supply, Schedule 4 became effective about August 15. Flows continued and never got below first priority during the watermaster season.

Mill Creek

Total stream runoff available from April 1 through September 30 was 3,734 acre-feet. An undetermined amount of water reached Upper Lake during May and June. The season ended in September with enough flow for first priority.

Soldier Creek

Total stream runoff available March 19 through September 30 was 4,364 acre-feet. An undetermined amount of water reached the lake during May and June. The season ended with 1.3 cfs. A local flash flood on August 30 completely filled and plugged the upper diversion structure.

Pine Creek

Total stream runoff available on March 20 through September 30 was 6,148 acre-feet. Rotation during May was discontinued and water was taken by all users. Flows during May were above 100 cfs for several days, then decreased to zero flow on August 15.

Cedar Creek

Total runoff available April 1 through September 30 was 4,830 acre-feet. Excess water reached Middle Lake during May. High water in May and June caused considerable damage to lower diversion structures and channel

Deep Creek

Total runoff from April 1 through September 30 was 8,070 acre-feet. Excess water reached Middle Lake during May and June. Some water reached the lake in July due to users trying to dry up to make hay. There was 1.3 cfs flowing on September 30.

Owl Creek

Total runoff from April 1 through September 30 was 12,750 acre-feet. An undetermined amount of water reached the lake during May and June. A large amount of rock and gravel during May and June caused a lot of maintenance during this time.

Cottonwood Creek

Total flow was not recorded due to an undetermining amount bypassing the recorder during May and June. Total amount recorded from April 1 through September 30 was 6,695 acre-feet. An undetermined amount reached the lake during May and June. Some water reached the lake during the first portion of July due to users drying fields to make hay.

Rader Creek

Flows were not recorded again this season due to the dam that washed out at the recorder site. Water reached Middle Lake during May, June and July. The lower ranches had a hard time drying up for haying, due to longer and higher water season and the higher elevation of the lake.

Eagle Creek

Total runoff from May 1 through September 30 was 7,950 acre-feet. An undetermined amount of water reached Lower Lake during May, June and July. Water during May and June was uncontrollable, filling most diversion structures with debris. Flows were not high in July. Most users were trying to dry their fields for haying.

Emerson Creek

Total runoff, April 1 through September 30, was 17,589 acre-feet. An undetermined amount of water reached Lower Lake during May and June. In July some water reached the lake due to drying of hay fields. Lower Lake reported to be 3 to 4 feet higher than it has been in some 20 years.

TABLE 78

DECREEES AND RELATED DATA - SURPRISE VALLEY STREAMS

Stream	Modoc County Superior Court Decree			Service Area Created	No. of Water Right Owners	Total	Remarks
	No.	Date	Type ^{a/}				
Bidwell	6420	1-13-60	S	3-16-60 ^{b/}	46	63.74	(Schedule 3) 3 priorities March 15-July 19. (Schedule 4) 5 priorities July 10-September 30. If no water passing Diversion No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4 ^{c/}	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriative License 1566, 1613, 1648, and 1850.
Pine	3391	12-07-36	CR	1-13-37	5 1 ^{c/}	d/ 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs, then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 d/	5-22-01 2-15-23	CA CA	9-11-29	12	28.90 ^{d/}	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Creek on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	7-01-77 ^{b/}	8	d/	Water rights based on a percentage of flow in an equal priority.
Owl	2410	5-29-29	CA	9-11-29	8	41.70	21 priorities; all year round but 8th priority, under which each of 3 owners receives his allotment for an 8-day period. Appropriative License No.2842, 3.54 cfs.
Rader	3626	6-04-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	4-05-26 11-05-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of Bedford Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVIII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

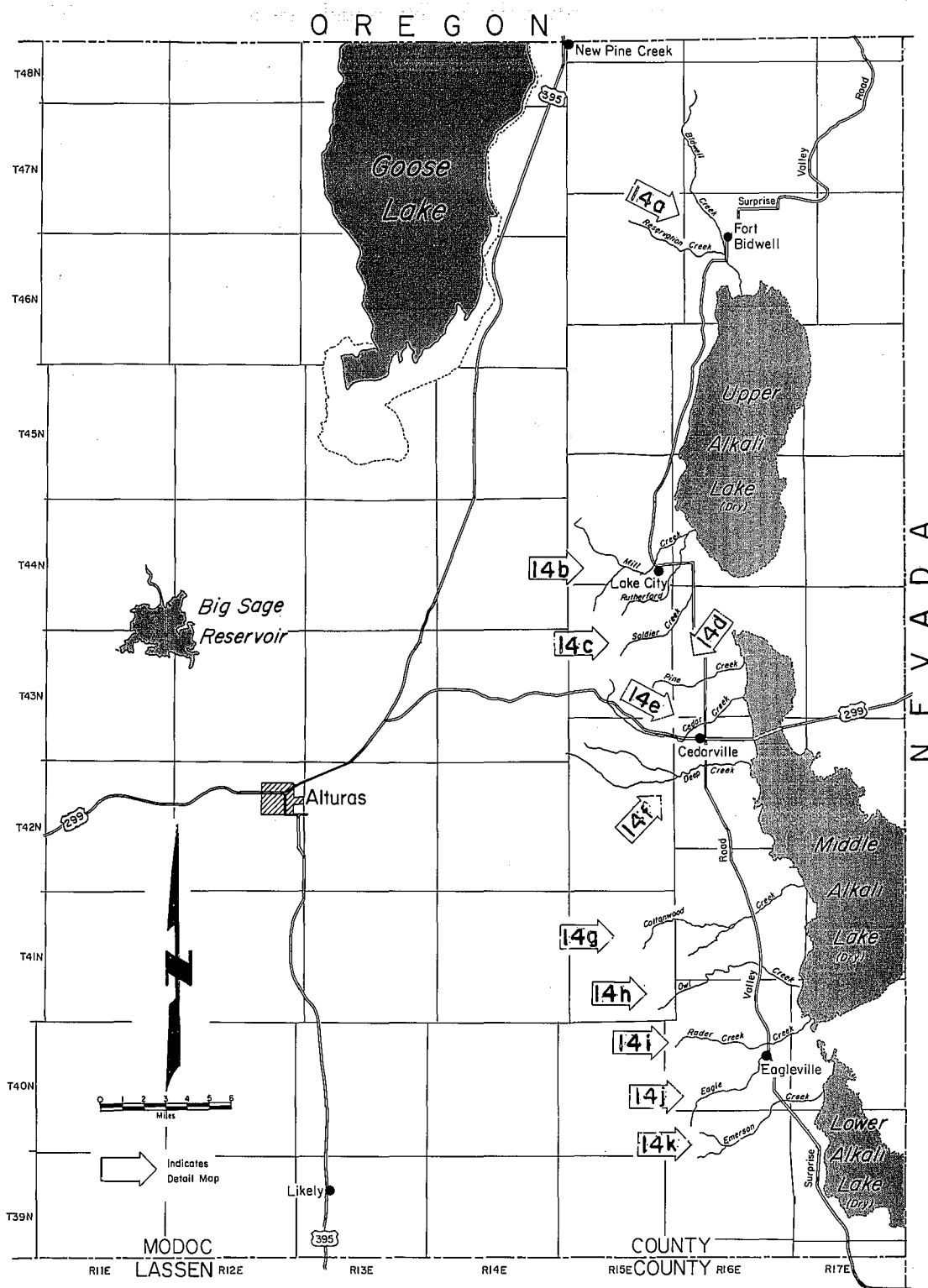
^{a/} S-Statutory, CR-Court Reference, CA-Court Adjudication.

^{b/} Added to existing Surprise Valley service area.

^{c/} Appropriative rights junior to the decreed rights.

^{d/} See remarks.

Figure 14



INDEX MAP SURPRISE VALLEY WATERMASTER SERVICE AREA

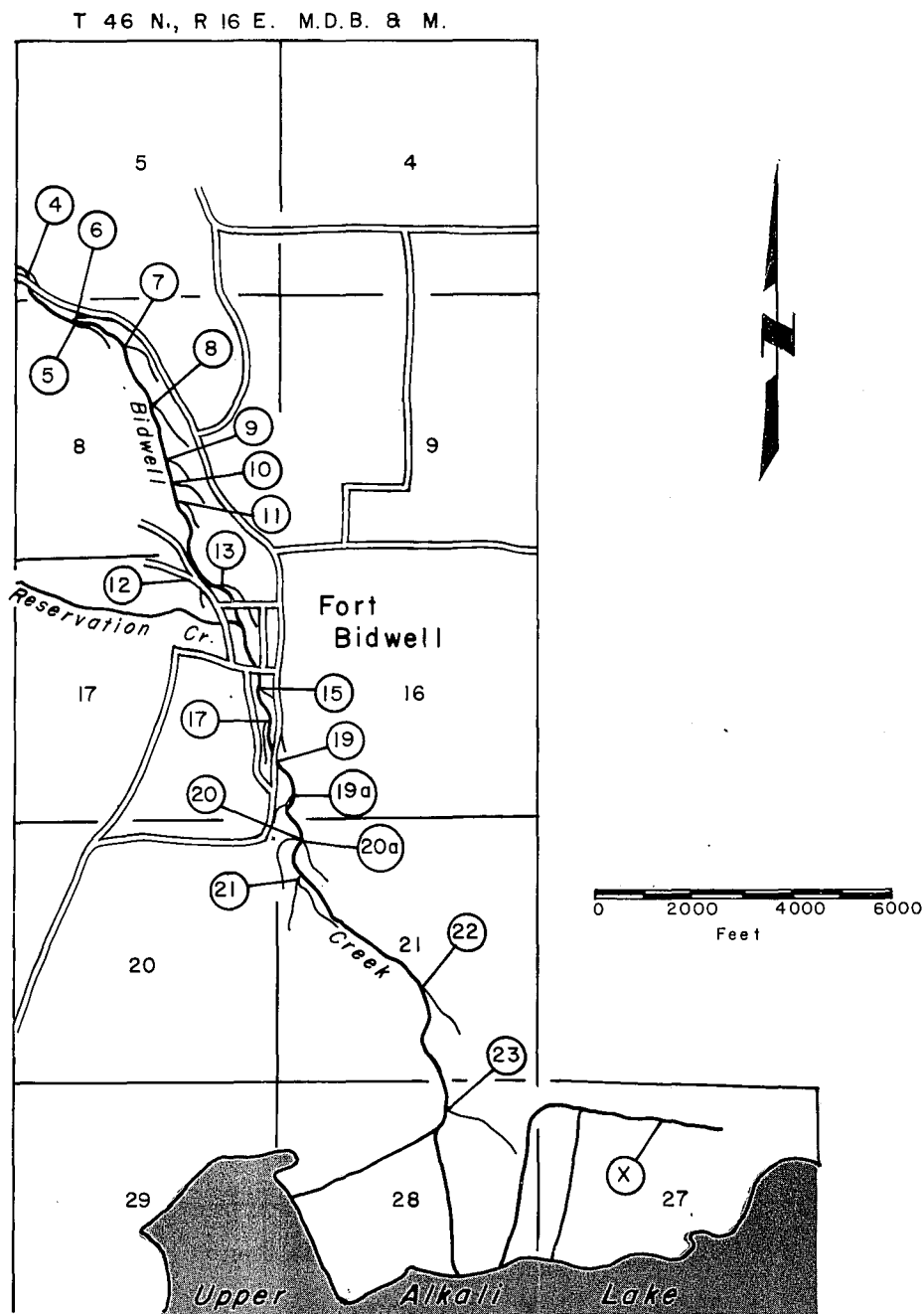
TABLE 79

DIVERSIONS FROM BIDWELL CREEK

Diversion Number	Name	March 15 to July 9	July 10 to Sept 30
		<u>cfs</u>	<u>cfs</u>
4	Lassen P.C.A.	4.71	4.7111
5	Peterson	0.38	0.35
	Bucher	0.45	0.35
	Moore	0.07	0.07
6	Anderson	0.18	0.18
	Moore		
	Morrision		
7	Peterson	0.50	0.40 ^{1/}
8	Lassen P.C.A.	7.25	7.25
	Town Users	0.05	0.05
9	McAuliffe	7.63	7.63
	Town Users	0.22	0.17
10	Carey	6.13	6.13
	Bucher	0.70	0.70 ^{2/}
	Peterson	0.44	0.44
	Town Users	0.26	0.26
11	Bucher	0.38	^{1/}
12	U. S. Indian Service	0.46	0.20 ^{3/}
	Town Users	0.26	0.26
13	Fee Ranch Inc.	5.24	5.24
	Town Users	0.44	0.44
15	Fee Ranch Inc.	8.94	8.94
	Sagehorn	4.94	4.94 ^{2/}
	Sagehorn	2.88	2.88 ^{2/}
	Toney	0.42	0.42 ^{2/}
	Town Users	0.03	0.03
17	Kober	0.05	0.05
19	Cockrells Inc.	4.26	4.26
20	Sagehorn	1.10	1.10
	Carey	0.95	0.95 ^{2/}
21	Sagehorn	1.39	1.39
	Carey	0.48	0.48
22	O'Callaghan	0.38	0.38
23	Sagehorn	1.79	1.79
XX	Sagehorn	^{4/}	^{4/}

^{1/} Two 36-hour periods of 2.00 cfs.^{2/} Includes 0.10 cfs stockwater right not to be diverted from creek.^{3/} Reservation Creek - U. S. Indian Service entire flow.^{4/} If flow is less than 3.82 cfs, deficiency is made up by additional diversions through Diversion 15 if Fee Ranch Inc. allotment is satisfied.

Figure 14a



**DIVERSIONS FROM BIDWELL CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 80

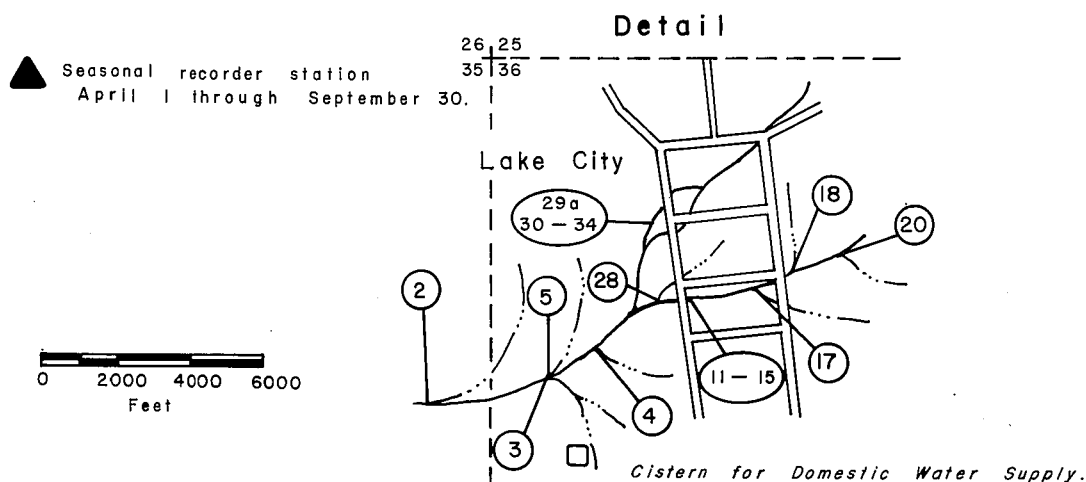
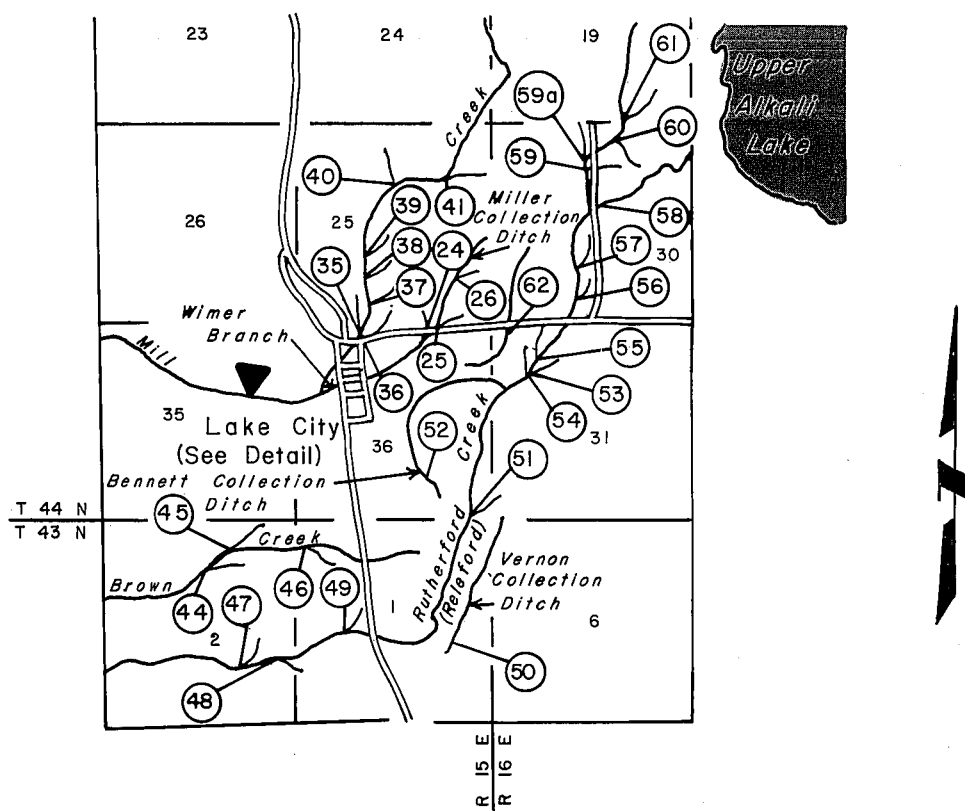
DIVERSIONS FROM MILL CREEK, BROWN CREEK, AND
RUTHERFORD (RELEFORD) CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
2	Dixon	0.38
	Smith	0.24
3	Bettendorff	1.36
	McDaniels	0.13
	Domestic Users	0.06
4	Dyer	0.07
	Fogerty	0.25
	George	0.26
5	Dixon	0.18
11-13,15,28	Town Users	1.92
17	Bettendorff	2.01
18	Town Users	0.33
20	Wimer	1.85
24	Dunten & Dunten Ranch, Inc.	1.45
26	Darst	1.85
29A,30-34	Town Users	1.63
Channel	Cockrells Inc.	10.30
Channel	Huntsman	1.85
44-46	Gorzell	0.80
47	Page	0.01
	Gorzell	0.575
	Gorzell	0.275
	Bettendorff	0.30
48	Hedgpeth	0.60
48-49	Page	1.65
54	Cockrells Inc.	0.40
55-57	Cockrells Inc.	0.75 ^{1/}
58	Cockrells Inc.	0.10 ^{1/}
58-59	Jorgenson	0.90 ^{1/}
59A	Cockrells Inc.	0.35 ^{1/}
61	Huntsman	0.65
<u>2/</u>	Cockrells Inc.	0.70

1/ Water from Hays Collecting Ditch is deducted from decreed amount of direct diversion from Rutherford Creek.

2/ Channel of Rutherford Creek.

Figure 14b



**DIVERSIONS FROM MILL CREEK, BROWN CREEK,
AND RUTHERFORD (Releford) CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 81
DIVERSIONS FROM SOLDIER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>Decreed Right cfs</u>	<u>Appropriative Right cfs</u>
1	Pratt et al	4.80	
	Powers	3.70	
	Overholtzer	1.45	0.87
1 &/or 2	Page	1.06	1.75
3	Carter	2.05	
	Lake	0.05	
4	Hironymous	4.30	
5	Eaton	2.20	1.25
11	Stopp	0.30	
15	White	7.14 ^{1/}	
16	Harris	1.03	
	Bullen	1.24	
17	White	0.73	
19	Cockrells, Inc.	2.04 ^{2/}	
26	Cockrells, Inc.	2.25	

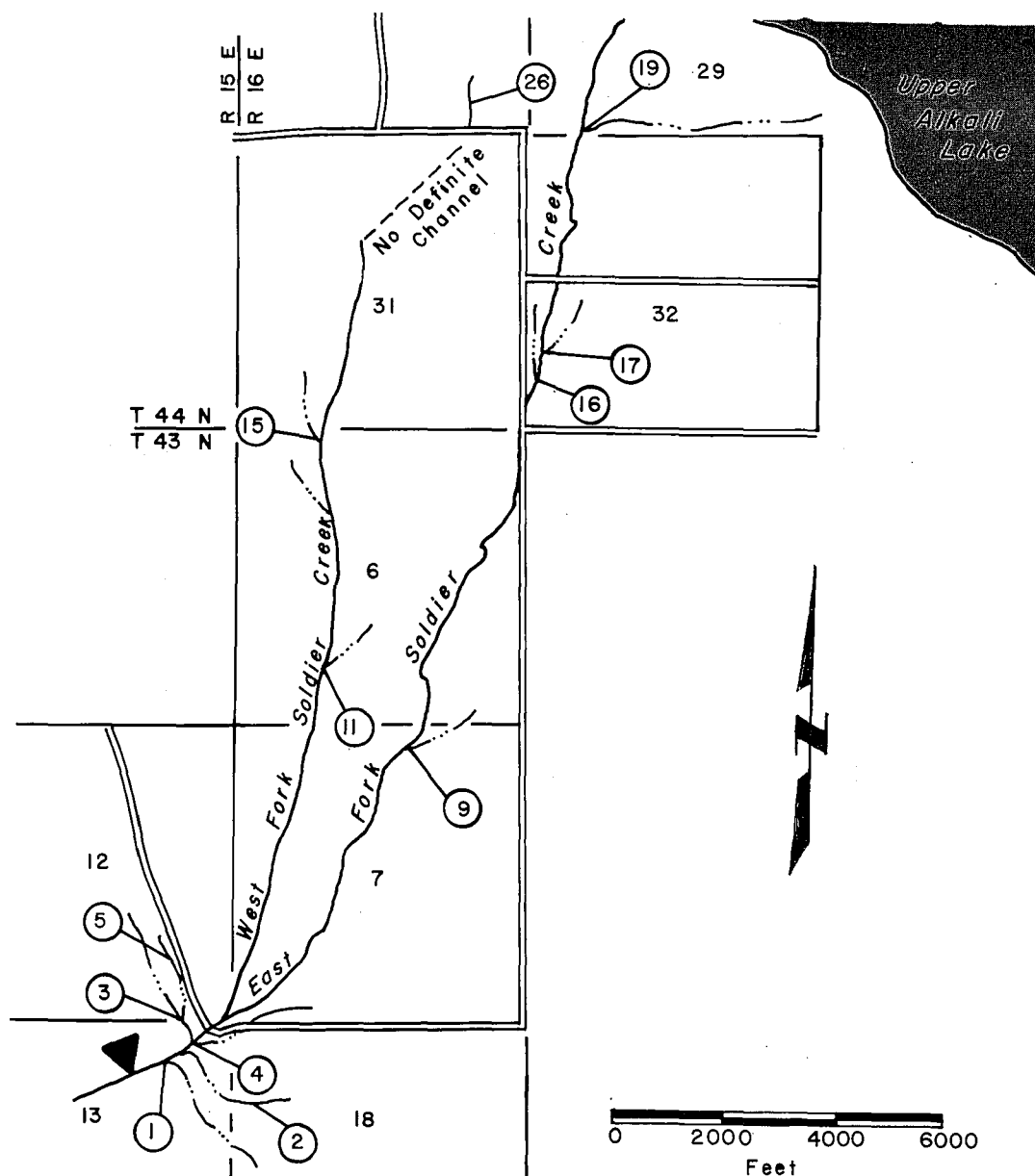
^{1/} Includes 2.81 cfs allotted to Diversion No. 13 which now diverts at Diversion No. 15.

^{2/} Plus any surplus flow that can be used beneficially.

Diversions 1 through 5 are upper users.

Diversions 11 through 26 are lower users.

All decreed rights must be satisfied before the appropriative right may be exercised.



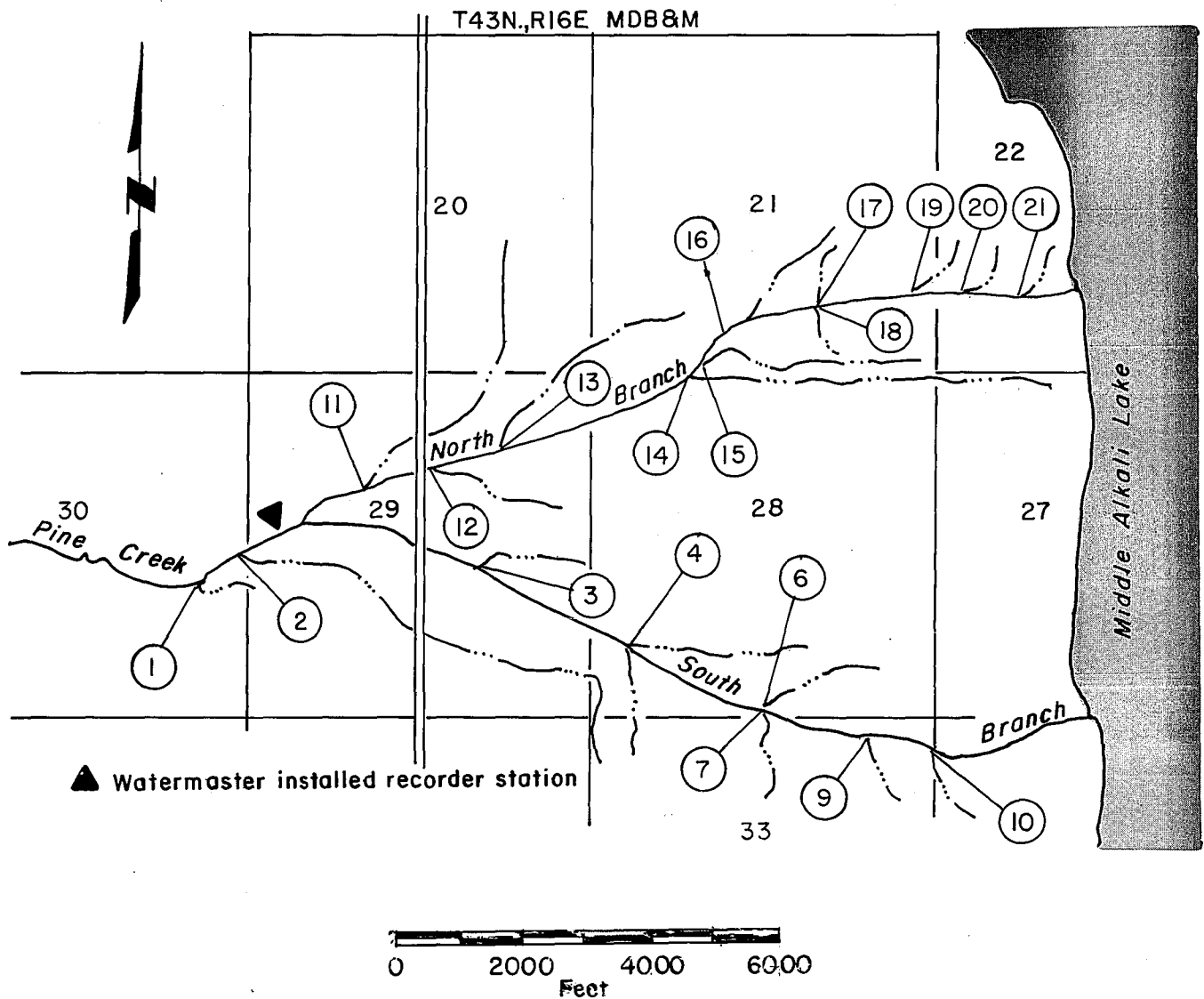
▲ Watermaster installed recorder station

DIVERSIONS FROM SOLDIER CREEK, SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 82
DIVERSIONS FROM PINE CREEK

<u>Rotation Allotments</u>	<u>Name</u>	<u>ac/ft</u>
1,11,13-21	Johnson	186.2
	Coops	3.0
	Schohr and Walgenbach	156.3
3,14	Schohr and Walgenbach	60.0
3,6-10	Hill	206.6
2.4	Bordwell	78.4
12	Hill	2.5

Total of first and second rotation is 603 acre-feet.



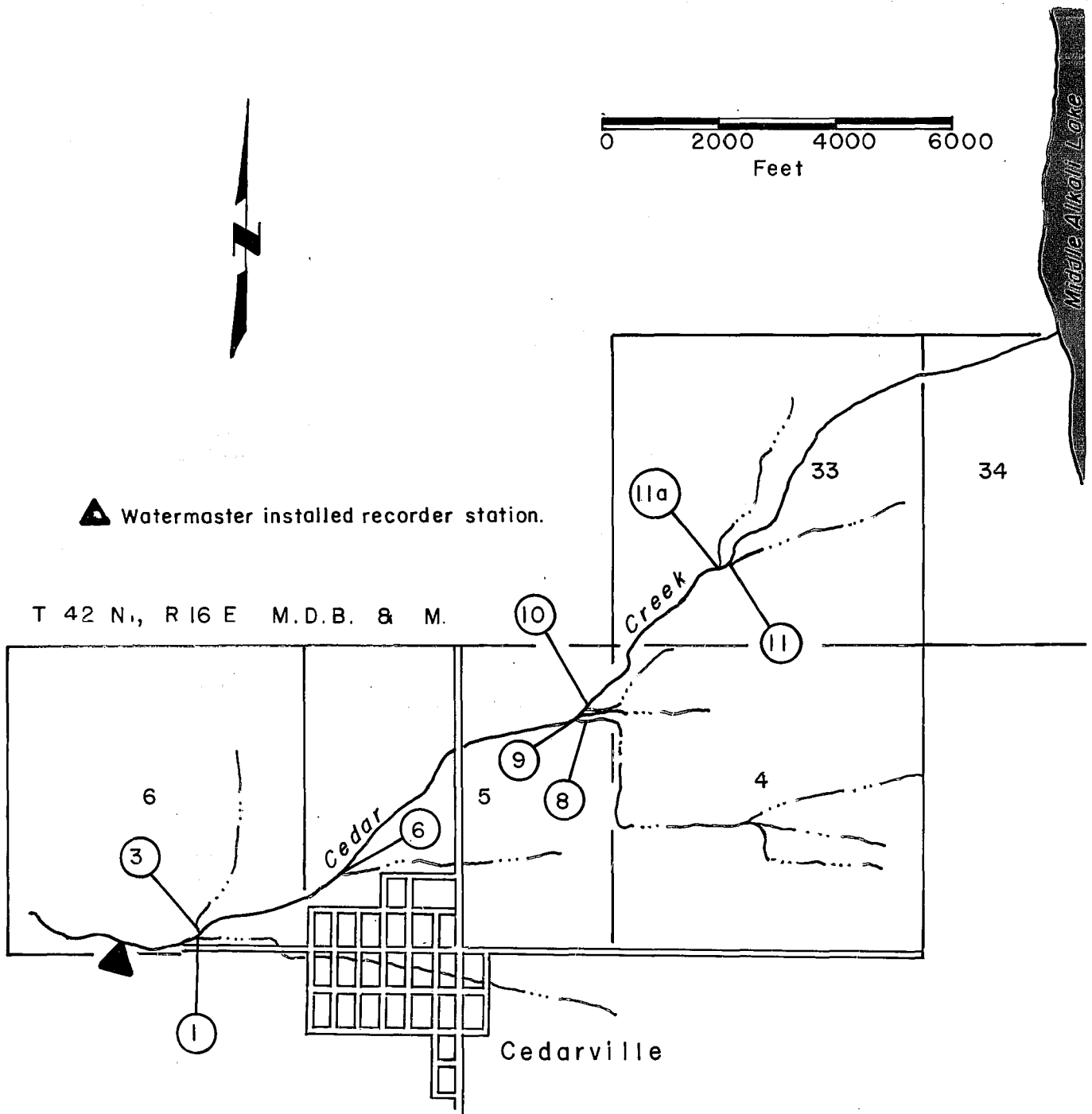
**DIVERSIONS FROM PINE CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

TABLE 83
DIVERSIONS FROM CEDAR CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Weber	5.00
3	Hill	2.65
	Laxague	0.50
6	Wylie	5.95
	Pratt	
8	Bunyard	2.30
	Kemble	1.40
	Ferguson	0.80
9	Sharrow	0.42
	Sharrow	1.08
10	Hutchens	2.60
11,11a	Ash	4.00
Channel	Areche	1.10
Channel	Hill	1.10

NOTE: The total 28.90 cfs includes
5.00 cfs imported from Thoms Creek.

Figure 14e



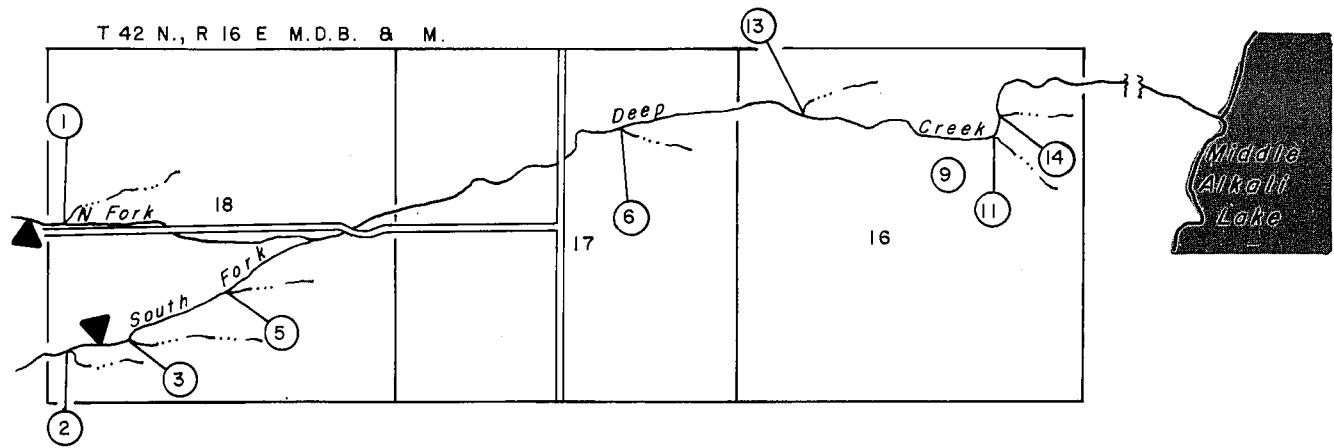
DIVERSIONS FROM CEDAR CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 84
DIVERSIONS FROM DEEP CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Hicks	0.10
	Cain	0.16
	Hussa	6.01
	Rosendahl	2.03
	Gooch	0.34
	Page	0.16
2	Laxague	0.65
3	Rosendahl	1.14
4	Queirolo	3.30
	Federal Home Administration	3.33
5	Houser	1.00
6	Rosendahl	0.40
9	Federal Home Administration	4.30
	Queirolo	1.00
<u>111/</u>	Laxague	1.05
13	Rosendahl	0.80
	Hussa	2.75
14	Bordwell	0.85

1/ May also be used in diversion 2.

Figure 14f



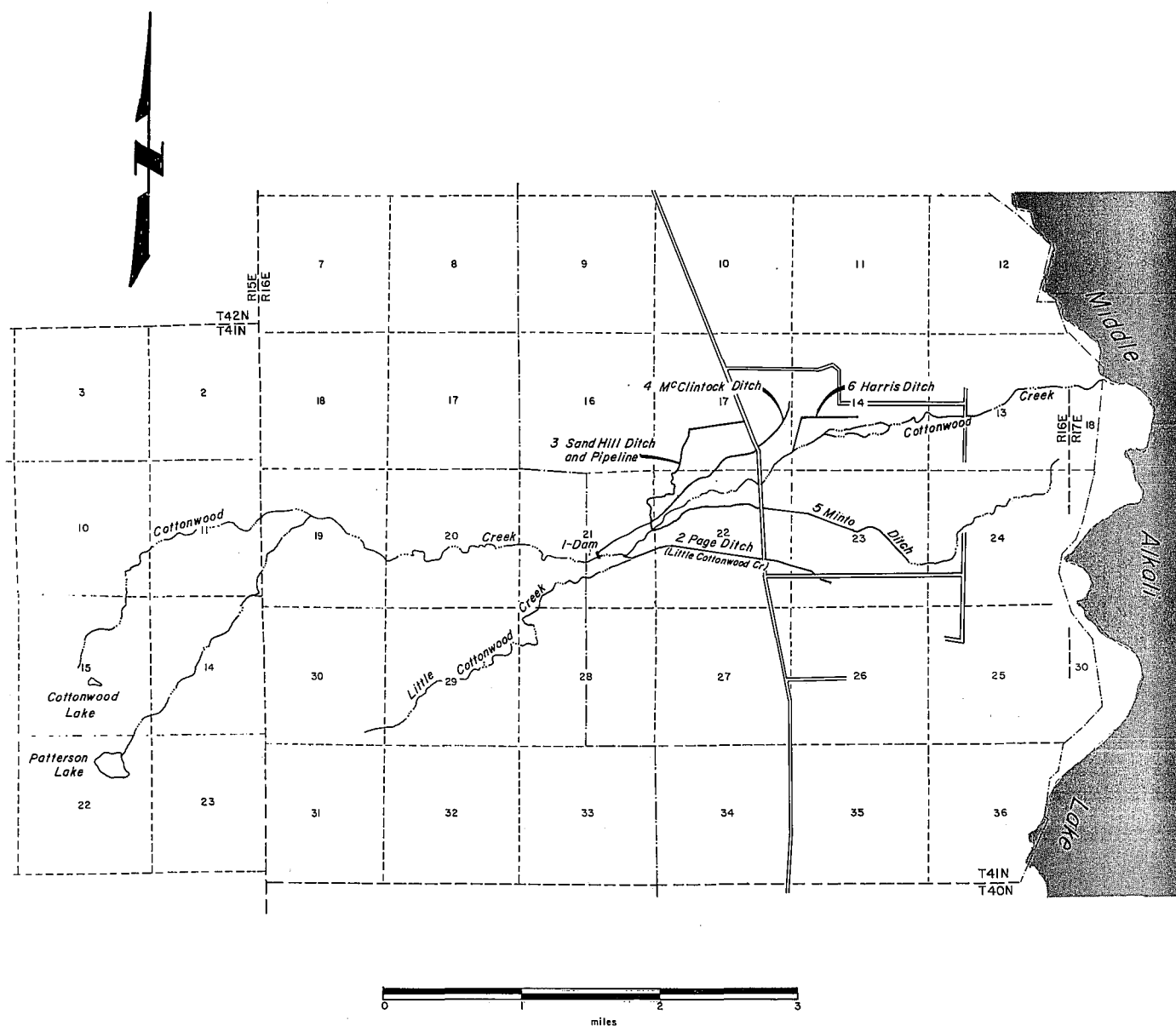
DIVERSIONS FROM DEEP CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 85
DIVERSIONS FROM COTTONWOOD CREEK

<u>Decreed Owner</u>	<u>Percentage of Water</u>
Carroll, R.	0.54
Stevenson, J.	6.00
Cockrell, W.	18.04
Cockrell, W.	5.58
Cockrell, Al. Cattle Co.	47.55
Cope	4.18
Goodwin, D.	12.53
Cockrell, W.	<u>5.58</u>
	100.00 ^{1/}

^{1/} During 1980 the water rights
were used on a rotation
schedule agreed to by the owners.

Figure 14g

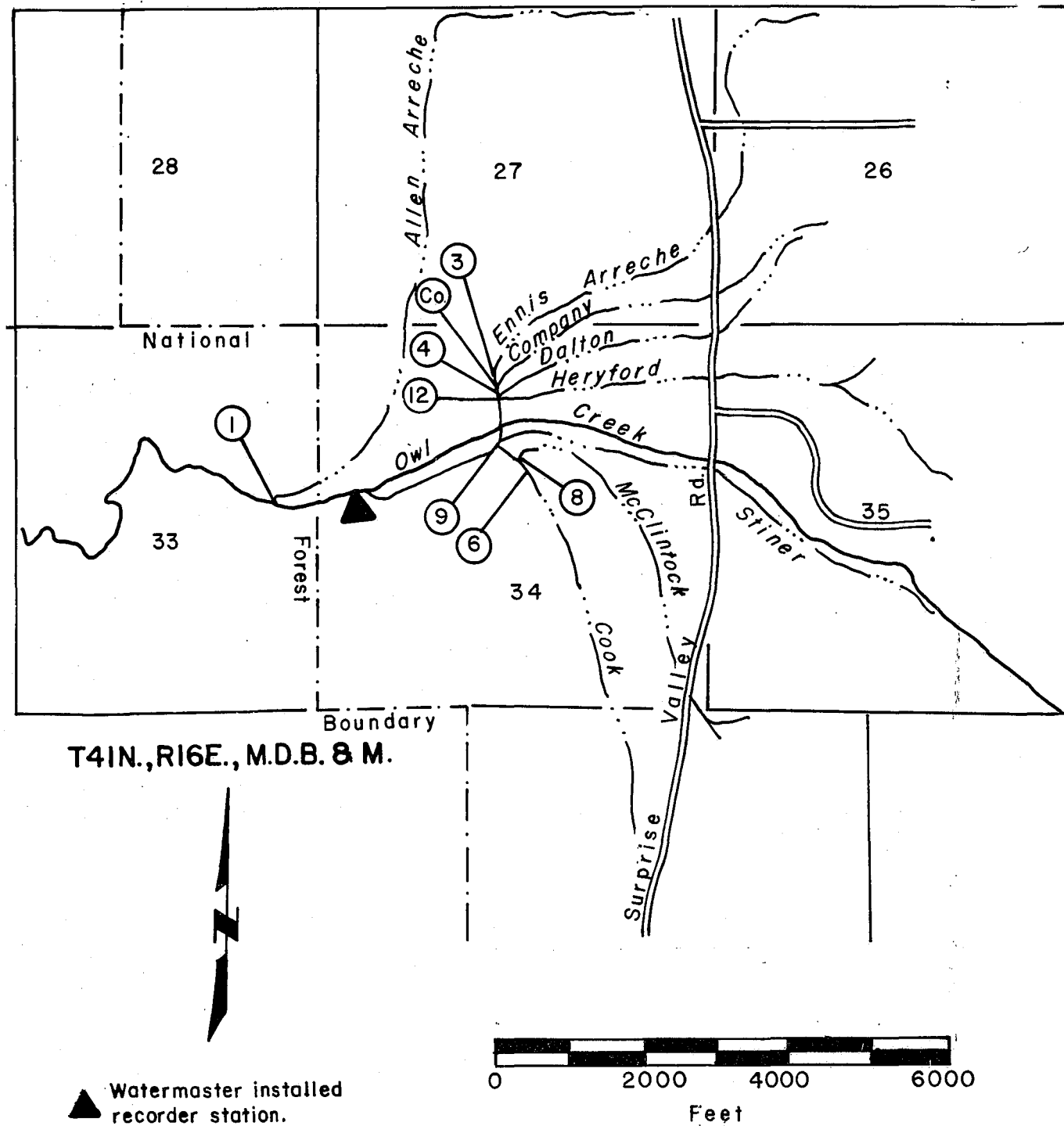


DIVERSIONS FROM COTTONWOOD CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA

TABLE 86
DIVERSIONS FROM OWL CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Cockrell Stevenson	2.47 1.81
3	Davis Stevenson	1.16 2.25
4	Davis	3.14
Co.	Stevenson Stevenson Stanley	1.26 1.81 0.99
6,8	Cockrells Inc.	17.62
9	Berryessa	3.71
12	Berryessa	5.48

Figure 14h



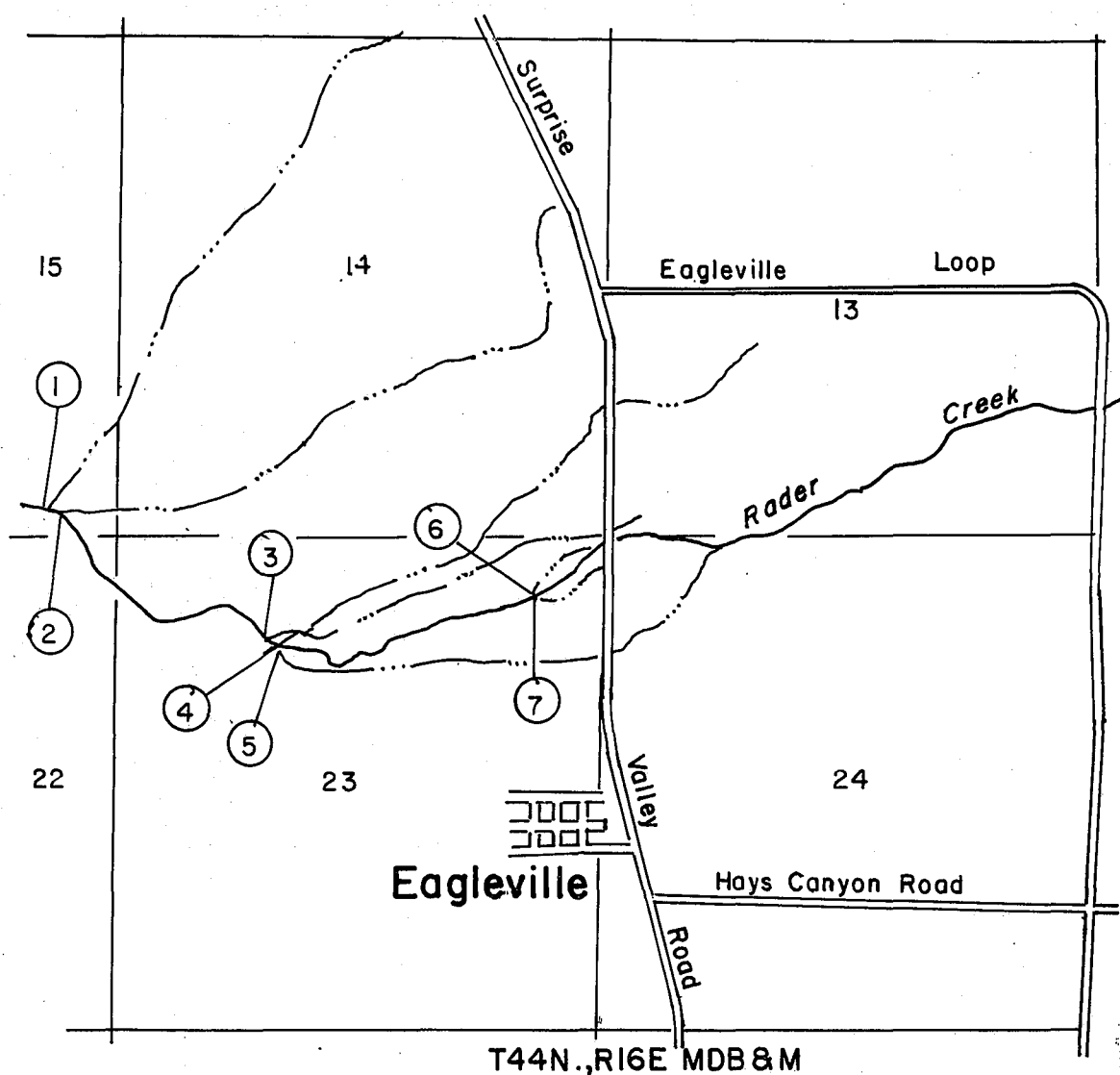
DIVERSIONS FROM OWL CREEK, SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 87
DIVERSIONS FROM RADER CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Cockrell	<u>1/</u>
2	Lazy S. J. Ranch, Inc.	3.50
3	Minto Ranch, Inc.	2.39
4	White Pine Lumber Co.	9.60
5	White Pine Lumber Co.	2.35
6	Minnitte	0.08
7	Reeves	0.08

1/ 1/7th of total flow from May 20 until water will not reach place of use.

Figure 14i



**DIVERSIONS FROM RADER CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

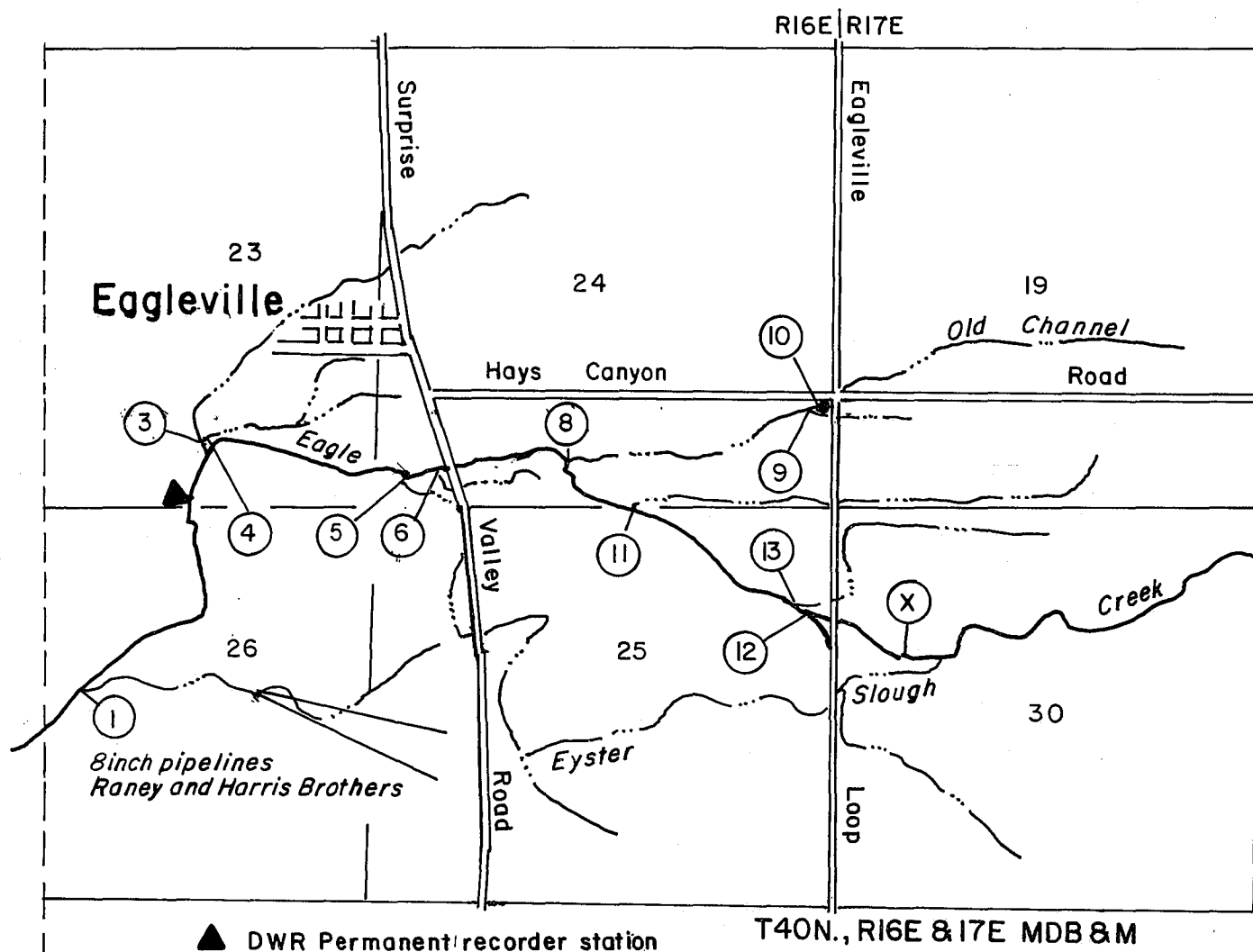
TABLE 88
DIVERSIONS FROM EAGLE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Harris Brothers	0.41
	Morgan	0.36
	Raney	0.51
3	13 Town Users	0.98
	White Pine Lumber Co.	5.00
4	15 Town Users	1.36
	White Pine Lumber Co.	1.20
5	Harris Brothers	0.50
6,8	White Pine Lumber Co.	2.65
9	Lazy S. J. Ranch, Inc.	0.15
10	Four Star Cattle Co.	3.15 ^{1/}
11	White Pine Lumber Co.	0.55
	Lazy S. J. Ranch, Inc.	1.95
12	Grove	0.20
	Miura	1.20
13	Grove	2.70
X	Harris Brothers	6.70 ^{2/}

^{1/} Minus any water received from the Prior collection ditch.

^{2/} Any water over 0.70 cfs from Eyster Slough
must be deducted from this.

Figure 14j



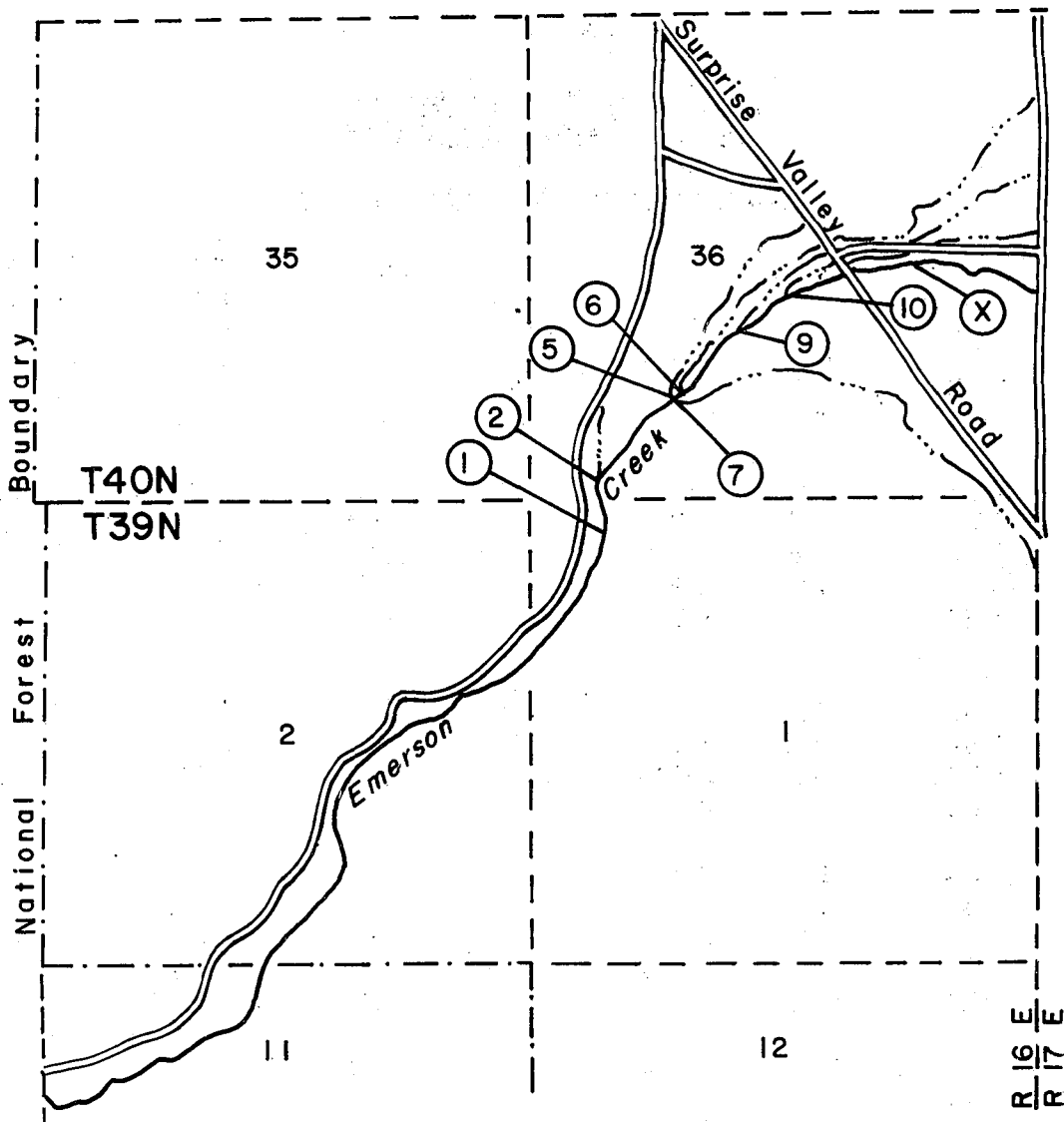
DIVERSIONS FROM EAGLE CREEK, SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 89
DIVERSIONS FROM EMERSON CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
1	Espil Sheep Co.	0.21
2	Harris Brothers	2.00
	Romagnoli	0.20
5	Bicondoa	3.30
6	Lazy S. J. Ranch, Inc.	0.60
	Miura	2.25
7	Berryessa	5.15
9	Warren	1.60
10	Espil Sheep Co.	3.89 ^{1/}
X - Channel	Grove	5.75

^{1/} Includes 1.79 cfs water right that was transferred from diversion number 1 to diversion number 10 in 1983.

Figure 14k



**DIVERSIONS FROM EMERSON CREEK,
SURPRISE VALLEY
WATERMASTER SERVICE AREA**

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 90

1984 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	12	41	51	206	81	17	11
2	14	36	56	179	74	16	9.5
3	15	33	118	164	70	15	9.2
4	15	33	141	183	65	14	8.8
5	16	33	132	184	61	14	8.4
6	18	33	125	201	59	13	8.4
7	20	33	121	180	56	13	8.5
8	27	36	131	158	51	12	8.4
9	35	32	149	142	47	12	8.3
10	37	32	161	127	44	11	8.0
11	39	29	204	118	40	11	7.9
12	39	28	259	117	38	10	7.8
13	42	31	293	113	35	11	7.7
14	45	41	295	110	32	10	7.4
15	41	74	239	113	31	9.9	7.7
16	36	101	204	120	29	9.3	7.6
17	33	101	199	122	28	9.4	7.2
18	29	91	201	122	29	9.3	7.0
19	31	80	219	123	27	9.2	7.0
20	39	68	255	120	27	9.1	8.6
21	49	61	272	115	26	8.7	8.6
22	44	65	266	111	24	8.5	8.1
23	44	80	286	108	22	8.6	8.1
24	48	85	274	111	21	8.5	8.1
25	52	77	244	112	20	8.4	8.1
26	99	67	241	111	19	8.3	8.0
27	86	56	224	110	18	8.1	7.7
28	69	51	224	108	18	8.0	7.9
29	60	50	247	104	17	7.9	7.7
30	50	48	278	93	16	15	9.6
31	46		261		16	20	
MEAN	39.7	54.3	205.5	132.8	26.8	11.1	8.2
AC-FT	2440	3230	12630	7900	2260	680	490

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 91

1984 Daily Mean Discharge
(In cubic feet per second)

MILL CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		10	27	37	12	5.1	2.3
2		10	26	32	11	5.0	2.3
3		10	27	28	11	4.9	2.2
4		10	24	27	12	4.8	2.2
5		10	19	26	12	4.7	2.2
6		10	20	25	11	4.6	2.2
7		10	22	23	11	4.5	2.2
8		11	23	21	10	4.4	2.2
9		10	24	19	10	4.3	2.2
10		11	27	17	10	4.2	2.2
11		14	31	13	12	4.1	2.2
12		17	29	12	11	4.0	2.2
13		19	25	12	10	3.9	2.2
14		22	27	11	9.5	3.7	2.2
15		27	30	11	9.0	3.5	2.2
16		26	32	10	8.5	3.4	2.2
17		25	33	9.9	8.0	3.0	2.2
18		23	35	9.5	7.5	2.7	2.2
19		21	38	9.5	7.0	2.5	2.2
20		19	40	9.4	7.0	2.2	2.3
21		17	40	9.3	7.0	2.2	2.2
22		19	40	9.2	7.0	2.2	2.2
23		21	36	9.2	7.0	2.2	2.2
24		23	37	9.3	6.5	2.2	2.2
25		24	38	9.4	6.0	2.2	2.2
26		27	32	9.7	5.9	2.1	2.2
27		29	30	9.9	5.8	2.1	2.2
28		30	36	10	5.7	2.1	2.2
29		31	37	11	5.6	2.1	2.2
30		29	39	12	5.2	2.1	2.2
31			40		5.2	2.2	
MEAN		18.8	31.1	15.4	8.6	3.3	2.2
AC-FT		1121	1912	915	449	205	132

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 92

1984 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		5.0	8.0	18	8.5	3.2	1.1
2		4.5	8.7	17	8.3	3.2	1.1
3		4.6	9.0	21	7.8	2.9	1.2
4		4.8	9.7	49	7.5	2.9	1.2
5		4.8	11	34	7.2	2.9	1.3
6		4.6	12	31	7.1	2.8	1.4
7		4.6	12	35	6.8	2.8	1.4
8		4.7	13	25	6.4	2.7	1.4
9		4.6	14	20	6.3	2.7	1.4
10		4.4	14	18	6.0	2.6	1.4
11		4.5	18	16	5.7	2.6	1.4
12		4.7	34	16	5.6	2.6	1.4
13		6.1	42	16	5.4	2.5	1.4
14		7.0	47	14	5.1	2.5	1.4
15		9.5	45	17	5.0	2.4	1.4
16		10	46	16	4.9	2.3	1.4
17		11	47	14	4.7	2.2	1.4
18		11	48	15	4.6	2.2	1.4
19	7.0	11	51	15	4.6	2.2	1.4
20	7.0	11	52	14	4.5	2.0	1.4
21	6.9	10	51	11	4.3	2.0	1.4
22	6.8	9.2	57	11	4.2	2.0	1.4
23	6.7	9.0	62	11	4.3	2.0	1.3
24	6.5	9.0	51	11	4.2	2.0	1.3
25	6.4	8.0	50	11	3.9	2.0	1.3
26	6.3	8.0	49	10	3.8	1.8	1.3
27	6.4	7.3	47	10	3.6	1.8	1.3
28	7.0	7.1	49	10	3.4	1.7	1.3
29	7.2	7.2	51	9.8	3.4	1.7	1.3
30	7.1	7.1	40	9.2	3.3	1.2	1.3
31	7.0		36		3.2	4.6	
MEAN	2.8	7.1	35.0	17.5	5.3	2.8	1.3
AC-FT	175	425	2150	1040	324	170	80

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 93

1984 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK AT DIVERSION OF NORTH AND SOUTH CHANNELS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		16	75	12	2.7	0.5	
2		16	98	11	2.5	0.5	
3		16	95	11	2.5	0.5	
4		16	92	14	2.4	0.5	
5		16	59	15	2.4	0.4	
6		16	45	13	2.3	0.4	
7		17	49	11	2.2	0.4	
8		20	75	11	2.1	0.4	
9		18	86	10	2.0	0.3	
10		18	100	10	1.8	0.3	
11		20	98	9.7	1.6	0.3	
12		22	110	9.2	1.5	0.2	
13		28	110	8.5	1.5	0.2	
14		37	75	8.0	1.4	0.1	
15		48	45	7.4	1.4	0.1	
16		72	40	6.9	1.3	0	
17		27	32	6.7	1.3		
18		20	41	6.5	1.2		
19		28	30	6.3	1.2		
20		24	35	6.0	1.1		
21		22	27	5.8	1.0		
22	11	30	23	5.6	0.9		
23	22	37	28	5.2	0.9		
24	22	30	20	4.9	0.8		
25	22	25	18	4.7	0.8		
26	120	22	19	4.3	0.7		
27	69	36	17	3.0	0.7		
28	41	45	16	3.1	0.6		
29	33	50	15	3.0	0.6		
30	22	46	13	2.9	0.6		
31	16		12		0.6		
MEAN	37.8	27.9	51.5	7.9	1.4	0.2	
AC-FT	750	1662	3170	468	88	10	

SUPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 94

1984 Daily Mean Discharge
(In cubic feet per second)

CEDAR CREEK AT CEDARVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	8.6	29	34	13	5.0	1.6	1.4
2	9.5	26	35	12	4.7	1.5	1.1
3	9.7	25	48	10	4.4	1.5	0.9
4	9.7	25	49	15	4.2	1.5	0.8
5	9.5	25	42	17	4.2	1.4	0.8
6	10	25	38	32	4.0	1.3	0.8
7	11	24	36	38	3.8	1.3	0.8
8	14	25	37	28	3.8	1.2	0.7
9	17	23	40	23	3.7	1.1	0.7
10	20	23	40	20	3.5	1.0	0.7
11	20	23	49	18	3.3	1.0	0.6
12	20	26	50	16	3.1	0.9	0.6
13	25	27	47	15	3.0	0.9	0.6
14	27	31	44	13	2.9	0.9	0.6
15	25	37	38	12	2.6	0.9	0.6
16	23	39	34	11	2.5	0.8	0.5
17	21	39	32	10	2.4	0.8	0.5
18	20	36	31	9.7	2.7	0.8	0.5
19	21	34	31	9.4	2.6	0.8	0.5
20	25	31	31	9.3	2.4	0.8	0.8
21	26	30	29	9.2	2.2	0.8	0.7
22	25	32	28	9.0	2.2	0.7	0.7
23	25	33	28	8.4	2.8	0.6	0.7
24	27	31	25	7.7	3.3	0.6	0.7
25	29	29	23	7.0	2.6	0.6	0.8
26	71	27	22	6.5	2.3	0.7	0.7
27	51	25	20	6.1	2.0	0.6	0.7
28	45	23	19	5.7	1.8	0.6	0.6
29	39	26	18	5.4	1.7	0.6	0.6
30 "	34	26	17	5.3	1.6	1.9	0.9
31	31		15		1.6	3.7	
MEAN	24.2	28.5	33.2	13.4	3.0	1.1	0.7
AC-FT	1490	1700	2040	800	180	70	40

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 95

1984 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		8.5	34	28	5.7	1.6	1.0
2		8.4	33	32	5.3	1.6	0.9
3		8.3	30	38	5.6	1.6	0.9
4		8.2	33	41	5.9	1.6	0.9
5		8.1	34	36	5.6	1.6	0.8
6		8.1	36	32	5.2	1.6	0.8
7		9.5	41	30	4.8	1.6	0.8
8		10	43	25	4.6	1.6	0.8
9		11	44	22	4.2	1.6	0.8
10		15	43	20	3.8	1.6	0.8
11		18	40	18	3.4	1.5	0.8
12		19	38	16	3.0	1.5	0.7
13		20	37	14	2.9	1.5	0.7
14		22	35	12	2.5	1.5	0.8
15		20	30	10	2.3	1.5	0.8
16		21	28	11	2.2	1.5	0.7
17		22	24	10	2.1	1.4	0.7
18		22	20	9.8	2.1	1.4	0.8
19		23	22	9.1	2.0	1.4	0.8
20		23	23	8.8	2.0	1.4	0.8
21		24	25	8.3	1.9	1.4	0.8
22		21	25	8.0	1.9	1.4	0.7
23		20	28	7.7	1.8	1.4	0.7
24		18	30	7.4	1.8	1.4	0.6
25		21	29	7.1	1.6	1.5	0.6
26		23	27	6.9	1.7	1.5	0.5
27		26	24	6.6	1.6	1.5	0.5
28		28	23	6.2	1.5	1.5	0.5
29		29	22	6.0	1.5	1.4	0.5
30		30	20	5.9	1.5	1.5	0.5
31			24		1.1	1.8	
MEAN		18.2	30.5	16.4	3.0	1.5	0.7
AC-FT		1081	1874	977	185	93	44

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 96

1984 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW NO. 2 DIVERSION

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		8.7	28	24	4.0	1.6	0.9
2		8.7	29	23	3.8	1.6	0.9
3		8.7	35	22	3.6	1.6	0.9
4		8.7	35	22	3.4	1.5	0.9
5		8.7	31	21	3.2	1.5	0.8
6		8.8	30	24	3.0	1.5	0.8
7		8.8	29	27	2.8	1.4	0.8
8		8.8	31	30	2.7	1.4	0.7
9		8.8	34	27	2.6	1.4	0.7
10		8.9	36	25	2.5	1.4	0.7
11		8.9	36	20	2.4	1.4	0.7
12		8.9	35	17	2.4	1.3	0.7
13		9.5	35	15	2.4	1.3	0.7
14		11	34	14	2.3	1.3	0.7
15		14	35	13	2.3	1.3	0.7
16		16	32	12	2.2	1.2	0.7
17		18	30	12	2.2	1.2	0.7
18		17	29	11	2.2	1.2	0.7
19		15	29	11	2.2	1.2	0.8
20		15	28	10	2.2	1.2	0.8
21		14	27	10	2.2	1.2	0.8
22		14	27	9.3	2.1	1.1	0.8
23		13	26	8.0	2.1	1.1	0.8
24		17	25	7.5	2.1	1.1	0.8
25		19	25	7.0	2.1	1.1	0.8
26		22	24	6.5	2.0	1.1	0.8
27		24	23	5.1	2.0	1.0	0.8
28		27	24	4.8	2.0	1.0	0.8
29		28	23	4.5	2.0	1.0	0.8
30		29	23	4.2	1.9	1.0	0.8
31			22		1.8	1.0	
MEAN		14.3	29.4	14.9	2.5	1.3	0.8
AC-FT		849	1805	886	152	78	46

SURPRISE VALLEY WATERMASTER AREA

TABLE 97

1984 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		3.5	8.2	18	44	5.8	2.8
2		3.6	12	19	42	5.0	2.3
3		3.8	23	18	44	4.4	2.3
4		4.4	16	31	42	4.0	2.3
5		5.0	11	32	48	3.7	2.3
6		3.6	7.5	31	52	3.6	2.3
7		6.1	9.0	36	52	3.4	2.3
8		4.0	17	29	47	3.1	2.3
9		4.0	26	24	43	3.1	2.3
10		4.7	30	24	39	3.0	2.3
11		6.8	34	25	36	3.0	2.2
12		9.8	36	24	33	2.8	2.1
13		20	37	26	31	3.0	2.0
14		24	42	26	28	2.8	1.9
15		22	39	30	27	3.0	1.9
16		21	38	33	26	3.0	1.8
17		13	38	35	24	3.0	1.8
18		12	44	37	22	3.0	1.8
19		8.2	52	40	20	3.0	1.7
20		11	53	41	19	3.1	1.6
21		22	50	41	20	3.1	1.6
22		25	48	37	14	3.0	1.5
23		21	50	39	14	2.5	1.4
24		17	47	42	12	2.3	1.3
25		14	42	43	10	2.2	1.3
26		9.0	42	44	9.8	2.2	1.3
27		7.5	39	44	8.2	2.0	1.3
28		9.0	38	46	7.5	1.9	1.2
29		7.2	40	54	7.2	1.8	1.2
30		10	38	45	6.8	4.4	1.2
31			32		6.4	6.1	
MEAN		11.1	33.5	33.8	26.9	3.2	1.8
AC-FT		659	2060	2011	1656	199	110

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 98

1984 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	4.5	10	33	84	77	8.1	5.3
2	4.5	10	35	82	77	7.2	4.0
3	4.5	9.6	61	79	77	7.2	3.2
4	4.5	10	37	87	77	6.9	2.5
5	4.6	10	27	82	74	6.6	2.5
6	4.5	10	18	82	74	6.6	2.5
7	5.2	9.6	18	78	56	6.6	2.5
8	6.6	11	29	25	78	6.6	2.5
9	7.2	13	44	39	64	6.2	2.5
10	7.2	12	64	46	44	6.2	2.5
11	6.9	17	87	35	41	6.2	2.4
12	6.9	18	95	37	41	5.9	2.4
13	7.7	18	100	37	39	5.6	2.4
14	7.7	31	89	41	33	5.6	2.4
15	8.1	49	85	49	29	5.3	2.4
16	7.2	41	82	51	29	5.3	2.3
17	7.7	35	82	56	29	5.0	2.3
18	7.2	27	82	69	31	5.0	2.3
19	8.1	23	86	79	27	4.6	2.3
20	10	19	88	74	25	4.6	2.3
21	13	18	88	56	19	4.6	2.2
22	10	25	88	77	15	5.0	2.2
23	10	33	92	69	13	3.8	2.2
24	10	27	89	64	12	3.5	2.2
25	12	23	89	56	11	3.5	2.2
26	79	18	88	64	10	3.5	2.2
27	23	16	84	66	10	3.2	2.2
28	16	15	86	77	10	3.2	2.2
29	13	17	88	74	9.1	3.2	2.2
30	11	18	89	72	8.6	5.0	2.2
31	11		87		8.1	14	
MEAN	10.9	19.7	71.2	62.9	37.0	5.6	2.5
AC-FT	672	1180	4383	3742	2277	345	150

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 99

1984 Daily Mean Discharge
(In cubic feet per second)

RADAR CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
MEAN							
AC-FT							

NO RECORD FOR 1984

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 100

1984 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	6.6		14	84	86	17	8.7
2	5.6		14	80	86	17	7.7
3	5.4		19	75	88	16	6.7
4	5.4		17	87	82	15	6.1
5	5.5		16	84	86	14	6.0
6	6.2		15	87	90	14	6.6
7	6.8		15	59	83	13	6.7
8	7.7		18	46	60	12	6.5
9	8.7		22	44	51	12	6.4
10	8.9		23	44	40	11	6.4
11	8.7	8.8	45	39	38	11	6.4
12	8.5	9.0		36	38	10	6.6
13	9.1	9.4		35	37	9.8	6.4
14	9.2	11		42	36	9.7	6.4
15	8.8	15		57	35	9.1	6.3
16	8.4	16		68	34	8.5	6.2
17	8.0	16		74	35	8.0	6.3
18	7.7	15		85	34	7.7	6.2
19	7.9	15		96	32	7.3	6.2
20	8.7	15		87	32	7.1	6.8
21	10	15		66	30	7.0	6.2
22	9.4	15		60	28	6.7	6.3
23	9.7	15		64	26	6.2	6.2
24	10	15	76	78	25	6.1	6.3
25	10	14	72	92	25	6.1	6.3
26	18	14	73	94	24	5.8	6.1
27		14	71	92	23	5.3	6.2
28		14	73	95	22	5.1	6.2
29		14	79	100	20	5.0	6.1
30		14	91	92	19	11	6.7
31			90		18	13	
MEAN	7.8 ^{P/}	13.7 ^{P/}	44.4 ^{P/}	71.4	44	9.9	6.5
AC-FT	359 ^{P/}	545 ^{P/}	1674 ^{P/}	4250	2700	610	390

P = Partial month total.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 101

1984 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	5.6	18	17	162	22	10	6.9
2	5.7	16	17	150	21	9.4	6.3
3	5.6	16	26	135	20	9.2	6.0
4	5.7	16	26	116	21	9.0	5.9
5	5.6	15	24	84	20	8.8	5.7
6	5.9	14	23	107	20	8.8	5.7
7	6.5	14	23	88	20	8.4	5.7
8	7.8	15	26	55	19	8.0	5.7
9	8.9	14	31	47	18	8.1	5.7
10	9.4	14	36	36	18	7.8	5.7
11	9.5	13	82	32	17	7.8	5.7
12	9.6	14	104	39	16	7.3	5.7
13	12	14	123	34	16	7.5	5.7
14	12	17	133	36	16	7.5	5.7
15	12	24	104	32	15	7.4	5.6
16	11	29	94	28	14	7.2	5.3
17	10	28	87	27	14	6.8	5.3
18	9.5	25	88	34	14	6.5	5.2
19	10	24	102	37	14	6.6	5.0
20	13	22	117	37	13	6.5	5.4
21	16	21	108	31	13	6.4	5.3
22	14	21	108	31	12	6.3	5.3
23	15	23	134	32	12	6.1	5.3
24	16	23	172	33	12	5.9	5.3
25	17	20	180	32	12	6.0	5.3
26	40	19	191	27	11	5.9	5.3
27	28	18	123	25	11	5.9	5.2
28	24	16	133	23	10	5.8	5.0
29	22	16	136	24	10	5.8	5.0
30	21	15	166	24	9.9	8.7	5.4
31	20		141		10	12	
MEAN	13.2	18.5	92.7	53.3	15.2	7.5	5.5
AC-FT	810	1100	5700	3170	930	460	330

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River service area is in southern Lassen County near Susanville. The main area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a stretch of about 25 miles. The valley floor is at an elevation of about 4,000 feet. Water comes from three stream systems: Susan River, Baxter Creek, Parker Creek, and their respective tributaries.

The Susan River originates on the east slope of the Sierra Nevada just east of Lassen National Park at an elevation of about 7,900 feet. It runs east from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The river has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek, the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank, further downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east side of the Sierra Nevada, about 10 miles southeast of Susanville. The main creeks in the system are Baxter Creek, which rises on the west side of the basin and flows east, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east side of Diamond Mountain and flows east for about 5 miles into Honey Lake.

Maps of the Susan River service area, showing the stream systems, diversions, etc., are presented as Figures 15 through 15f, pages 223 through 235.

Basis of Service

The waters of Susan River and its tributaries are distributed according to the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree defines the rights to the use of water from the Susan River, exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks.

The water of Baxter Creek and its tributaries is distributed according to the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead Creeks and Schedule 4 the rights to the use of water from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed according to the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker Creek stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

Water in the Susan River service area comes from two major sources: snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than half the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this part of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River Channel and joins the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 108 through 114, pages 236 through 242.

Method of Distribution

Irrigation in the Susan River service area is done by putting dams in the main channels, thus raising the water level for later diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and generally much smaller on the various creeks. Wild flooding is the most common method of irrigation. Part of the irrigated lands have been leveled, permitting more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas as a result of surface irrigation, or as a result of seepage from ditches and creek channels.

The Lassen Irrigation Company is allowed to use its three reservoirs (McCoy Flat, Hog Flat and Lake Leavitt) to store water as follows: (a) between March 1 and July 1 when the flow in the river just above its confluence with Willow Creek is more than 20 cfs, and (b) at all other times when the flow at the same point is 5 cfs in spite of the allotments outlined in Schedules 3 and 6, and users of third priority class in Schedule 5 of the Susan River decree.

1984 Distribution

Watermaster service began in the Susan River service area on March 28 and continued until October 1. Virgil Buechler, Water Resources Engineering Associate, was watermaster.

The water supply throughout the service area was the wettest of record. McCoy Flat and Hog Flat Reservoirs and Lake Leavitt spilled. The hay crops, due to the precipitation and climate, provided record-breaking harvests on both irrigated and nonirrigated land. Outside rangeland was in excellent condition.

Parker Creek

First priority water rights were served through July and then rapidly diminished to a spring-fed trickle for the uppermost users by July 4.

Baxter Creek

Baxter Creek runoff was about normal, mainly because the decomposed granite of the Diamond Mountains absorbed much of the runoff. The flows were sufficient to supply all priorities through June. When the snowpack was gone the flows decreased to a low of 2.0 cfs in upper Baxter Creek and 0.30 cfs in the Long Ditch.

Lassen-Holtzclaw Creeks

The water supply was sufficient to meet both priorities through July. From August 1 through the rest of the season, the Tangeman Ranch was entitled to all water available in the stream, which was less than their 4 cfs first priority.

Hills Creek

The water supply in Hills Creek was sufficient to satisfy all allotments until July 4. Ellena and Warren set a rotation on their ditch. All storage allotments were filled and Emerson Lake started releases the first of August and continued until emptied in mid-September.

Gold Run Creek

The water supply in Gold Run Creek was sufficient for third priority water until July 15 and then the creek leveled off at 3 to 4 cfs for the rest of the season.

Piute Creek

The water supply, which is spring fed, was sufficient to satisfy all allotments during the year, with some surplus into the Susan River.

Willow Creek

The flow in Willow Creek was enough to supply all allotments throughout the season. The surplus flows and the springs below Willow Creek Valley have increased from last year.

Susan River

There was enough water in the Susan River to fill all of the allotments of Schedule 6. The A & B Canal users got their Schedule 5 second priority for most of the season. The Susan River flows satisfied all schedules through July 20, with some water stored in Lake Leavitt.

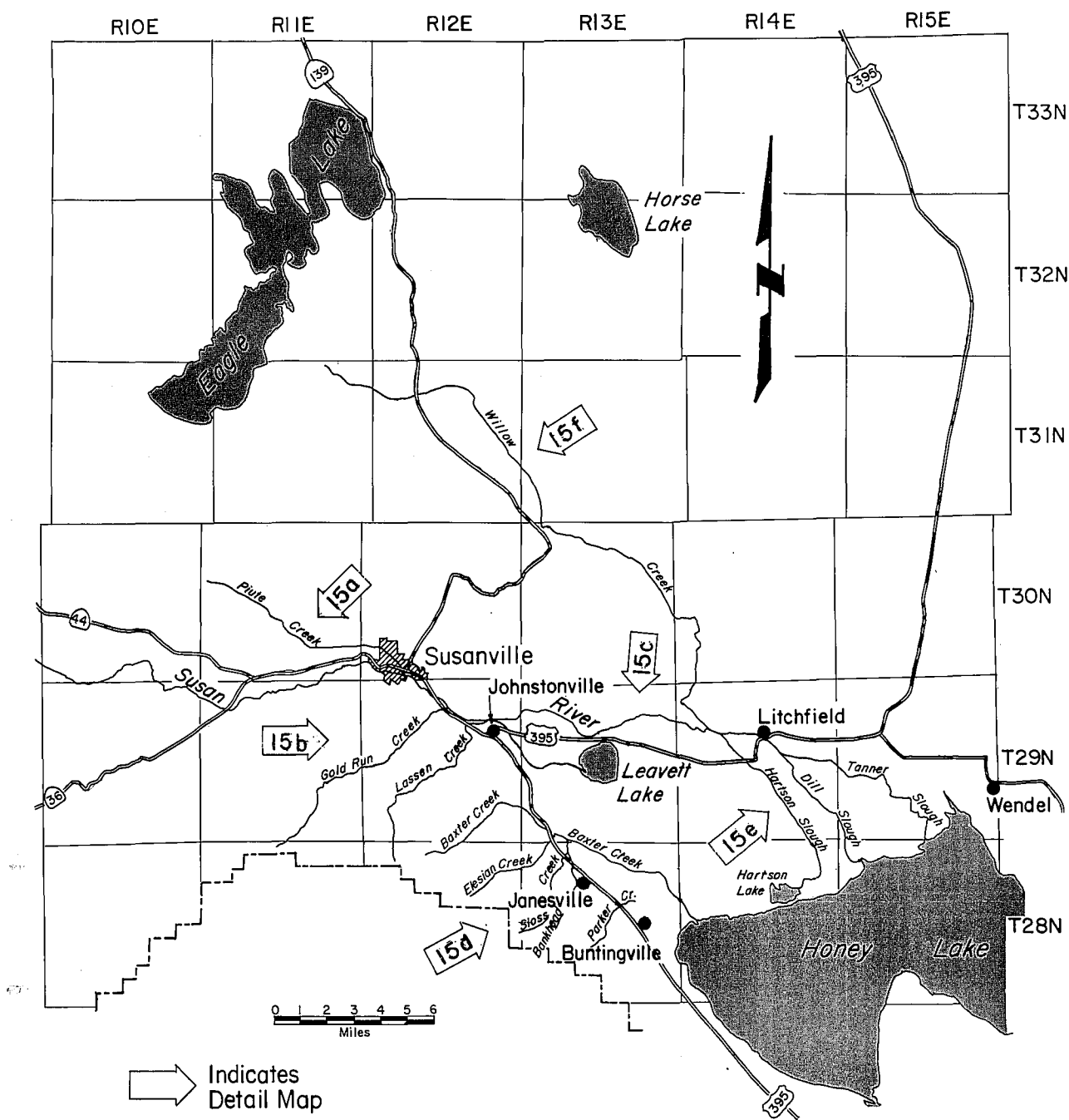
Lassen Irrigation Company Reservoirs

McCoy Flat Reservoir filled during the spring runoff and spilled until June 20 at which time water was released for transfer to Lake Leavitt. Releases continued until August 18 when McCoy Flat Reservoir was empty. Hog Flat Reservoir partially filled in 1984 and releases were started on June 6 and continued until July 6, at which time it was empty. Hog Flat Reservoir releases were 2,246 acre-feet in 1984.

Lower Susan River

The flow of Susan River above Willow Creek was in excess of 20 cfs until June 20, then decreased to a minimum of 3 cfs on August 3, and gradually increased for the remainder of the season.

Figure 15



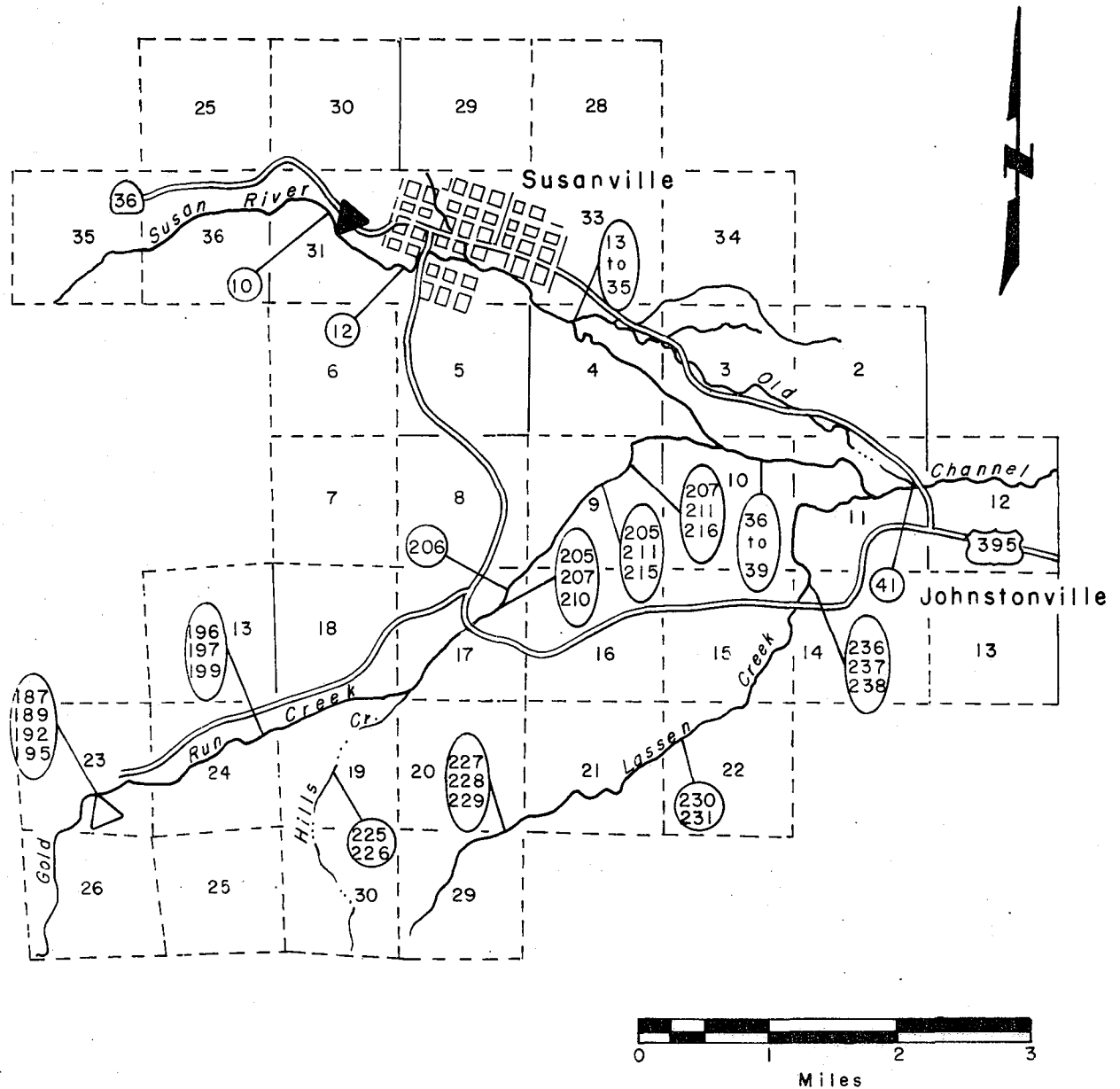
INDEX MAP SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 102
DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
10	Ramsey Ditch	6.40
12	Federal Government Sv. Ditch	3.26
13-35	Old Channel	17.10
36-39	Lassen 7-D Ranch Inc.	4.85
41	Occidental et al	16.00 ^{1/}
187,189 192,195	Satica Ditch	3.85
196,197 199	Sella Ditch	2.62
205,207 210	Satica	3.60
205,211 215	Pyle	4.90
206	Mallery	^{2/}
207,211 216,219	Lassen 7-D Ranch Inc.	3.85
207,211 216,219	Mallery	3.80
220	Emerson Hills Ditch	3.85
225-226	Nagle	2.45
227-229	Tangeman	4.60
230-231	Mallery	2.70
230,240	Lassen 7-D Ranch Inc.	2.70

^{1/} Does not include Lassen I. D. water rights to Lake Leavitt.
^{2/} 48 Percent of Gold Run Creek at 206.

Figure 15a



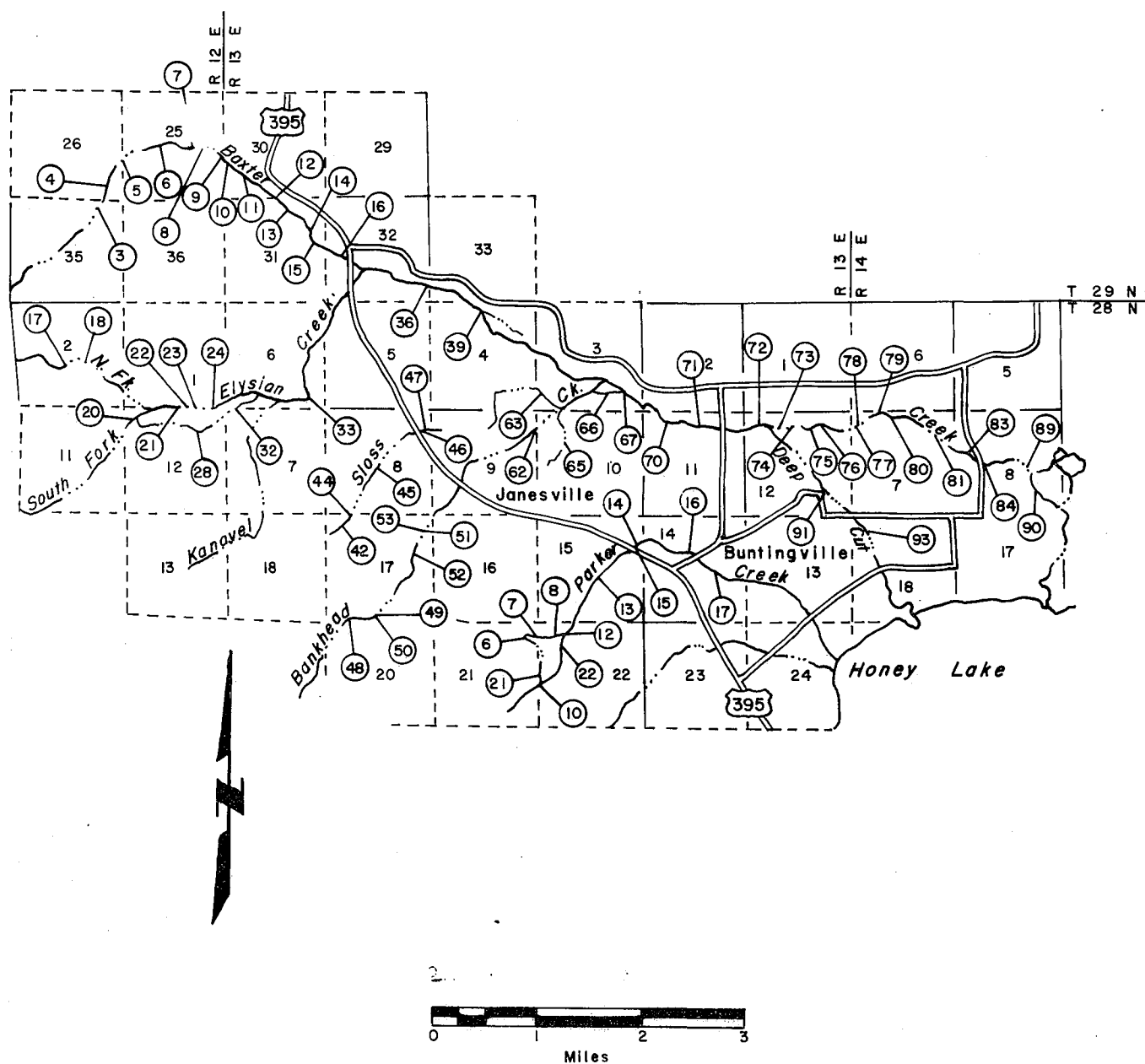
DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 103

DIVERSION FROM BAXTER, ELESIAN, SLOSS, BACKHEAD, AND PARKER CREEKS

<u>Baxter and Elesian Creeks</u>		
<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
3-5	Dickson	2.50
6-8,12	Gray Eagle Corp.	0.88
11	Burnett, Baker	0.20
8-10,12	Mallery	3.23
8,12-16	Mallery	3.49
16	Gray Eagle Corp.	0.52
17-18	Faith Ranch	0.16
20	Bailey	1.71
17,21,26-27	Williams	4.10
17,22-24,28,32-33	Smith	2.82
17,22-24,28,32-33	Kanaval	4.58
36,39	Peterson	1.42
70	Ahern	0.02
71-72	A & K Company	1.71
75,77,79-80	Blickenstaff	0.64
78	U.S. Hertz Inc.	1.05
81,83	Blickenstaff	2.88
73,75	Garza	1.17
74,76	Hemphill	1.96
75,77	Dieter	1.95
75,77,80	Dieter	0.30
77,79	Mulroney	1.80
78	Mulroney	0.67
78	Cummings	0.15
81,83	Blankenship	0.50
84,90	Dow	1.80
85,89	Marsters, McDonald	1.60
<u>Sloss and Backhead Creeks</u>		
42	Mossman	0.02
44	Doyle	0.002
45	Snipes	0.08
46	Goddard	1.20
46-47	Peterson	1.20
48-50	Row	0.15
51	de Rocher	0.08
52-53,55	White	0.48
56,62	Ashmore	0.53
63,65	Dow	2.83
66-67	Myers	0.26
91,93	Bailey	3.02
<u>Parker Creek</u>		
6-12	Butler	0.89
13-15	Hoffman	3.26
15	Flux	1.38
16-17	Bailey	2.06

Figure 15b

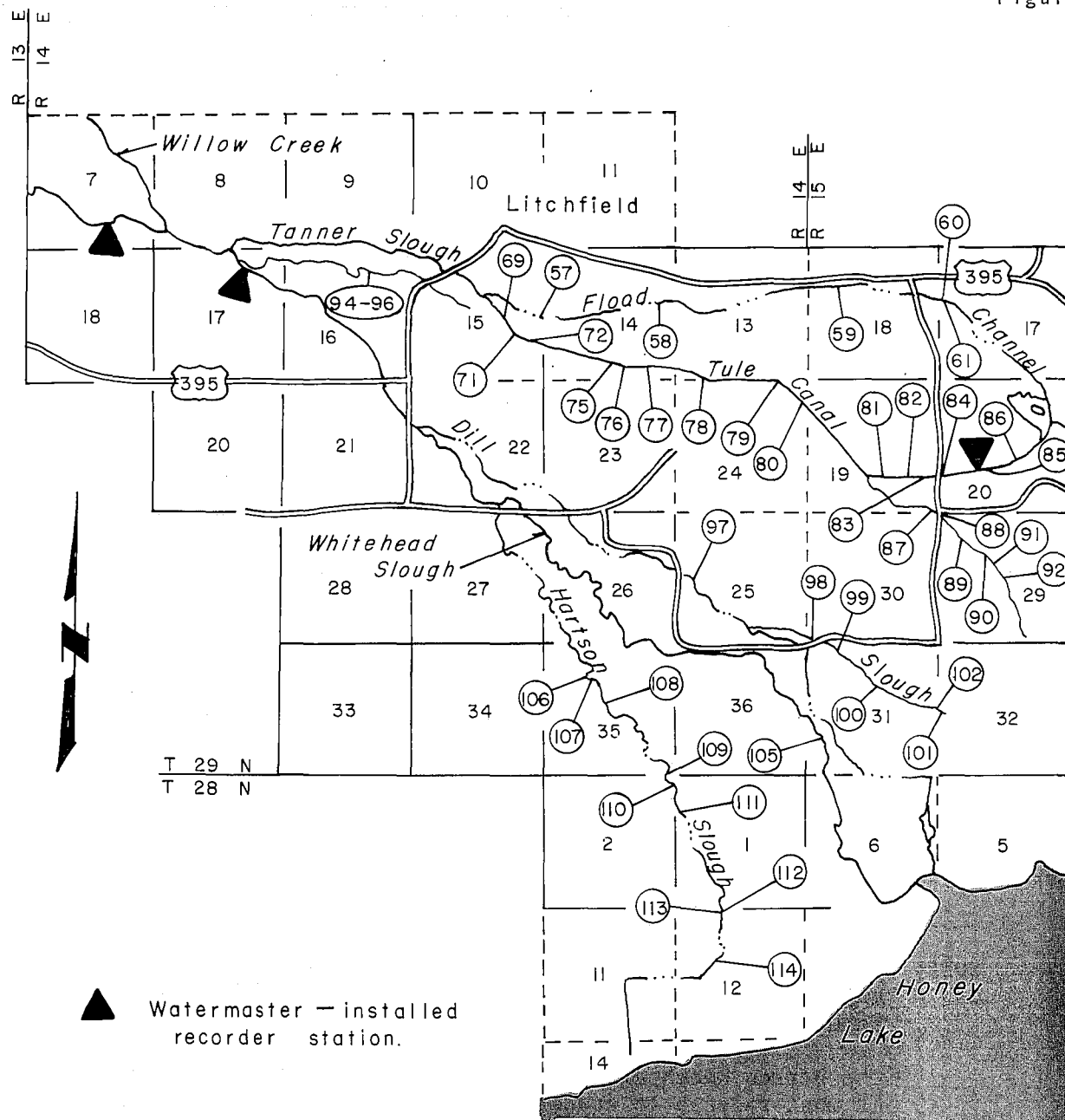


**DIVERSIONS FROM BAXTER CREEK AND PARKER CREEK,
SUSAN RIVER
WATERMASTER SERVICE AREA**

TABLE 104
DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
56,94,96	Smith et al	3.95
57-58,69 72	Smith	7.50
58-61, 79-81,84	Mapes	13.29
71,75-78	McClelland	10.75
81-83	DeWitt	1.75
	Theodore	1.88
82,87-89 91-92	Wells	3.75
82,87-89 91-92	DeWitt	3.75
85-86	Calif. Dept. of Fish and Game	19.20
90-92	Calif. Dept. of Fish and Game	2.26
90-92	Brown et al	0.34
97	Tanner	5.00
98,100-101	Dow	5.00
99	Honey Lake Ranch	7.50
102	Honey Lake Ranch	5.45
106,109 111	Roberts	1.10
106,109 111	Tanner	2.55
107-108	Roberts	1.20
110-111	Wolf	1.55
110, 112-114	Calif. Dept. of Fish and Game	3.10

Figure 15c



DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

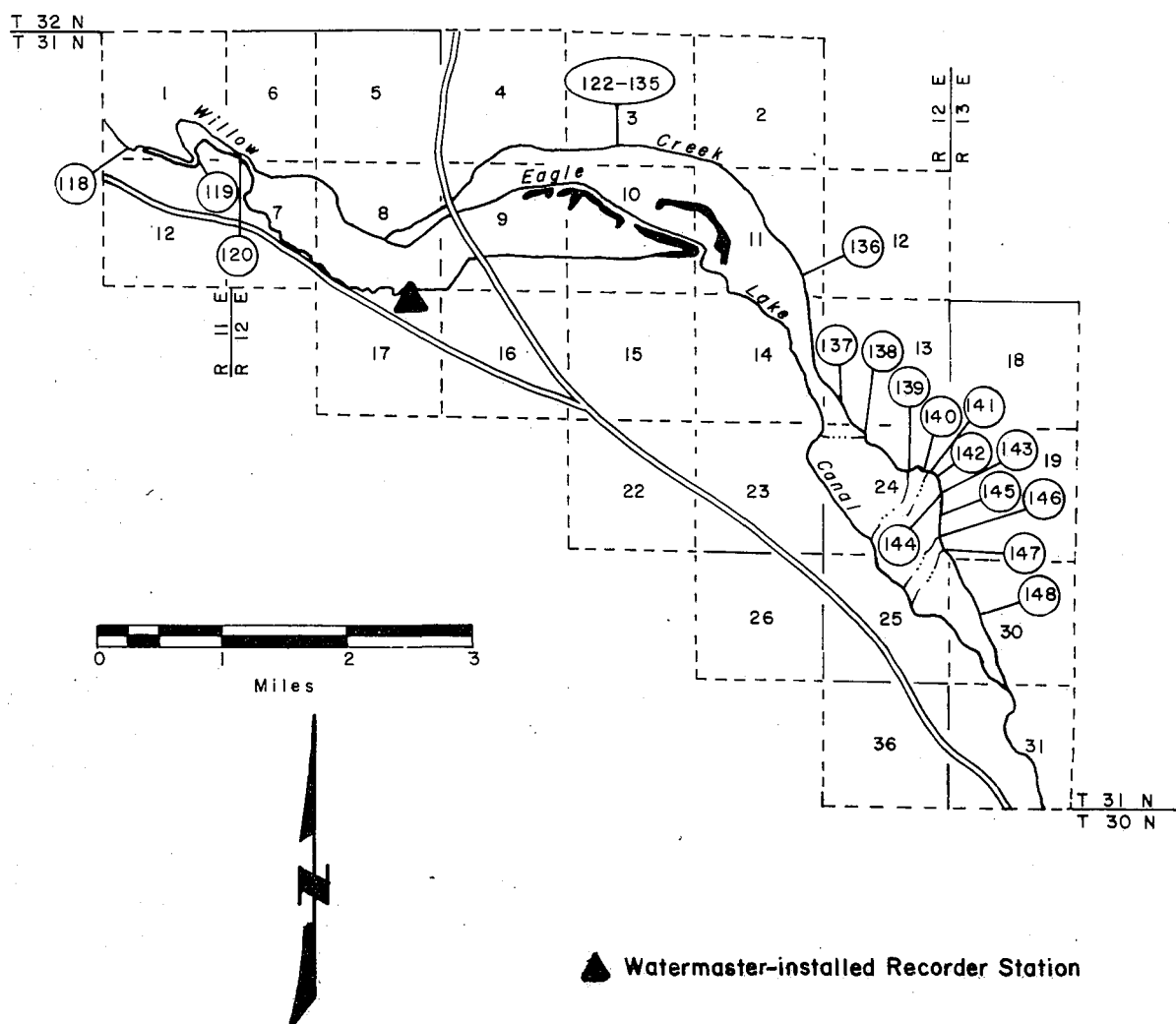
TABLE 105
DIVERSIONS FROM WILLOW CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
118-119	Murrer	2.10
	Barron	2.10
120	Murrer	1.00
122,135	Barron	14.90
136-143, 145	Hansan Ranch	4.90
144-147	Hagata	2.25
147-148	Hagata	1.95

NOTE: Allotments to be measured as the average difference during any seven-day period between the water available for use on the acreage to be supplied and the water passing off the acreage.

The Barron Ranch also diverts from the Old Eagle Lake Canal. It must release to downstream users 38 percent of second priority water available to it over any seven-day period. If deficiency exists, the watermaster obtains required flow by increasing Barron Reservoir releases.

Figure 15d

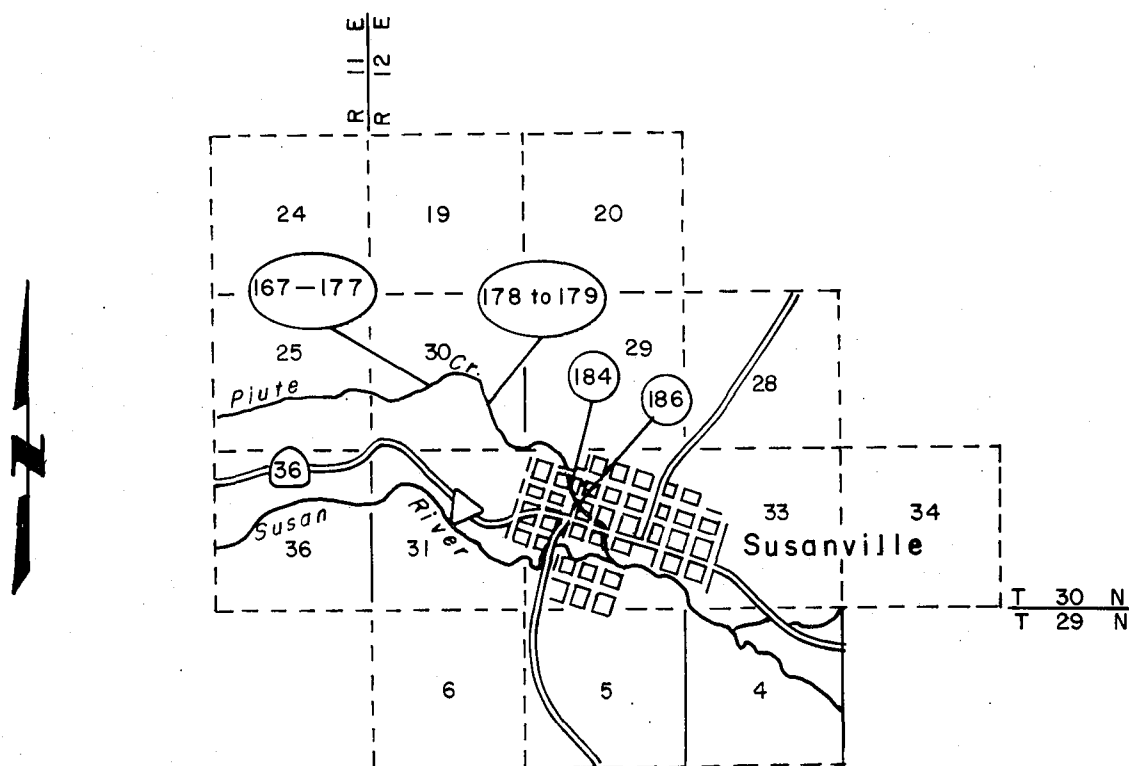


**DIVERSIONS FROM WILLOW CREEK,
SUSAN RIVER
WATERMASTER SERVICE AREA**

TABLE 106
DIVERSIONS FROM PIUTE CREEK

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
167-177	California Pacific Utility	2.50
178-179	Marmo Ditch	0.16
184	Susanville, City of	0.11
186	Susanville Elementary School	0.07

Figure 15e



△ U.S.G.S. Permanent Recorder Station.

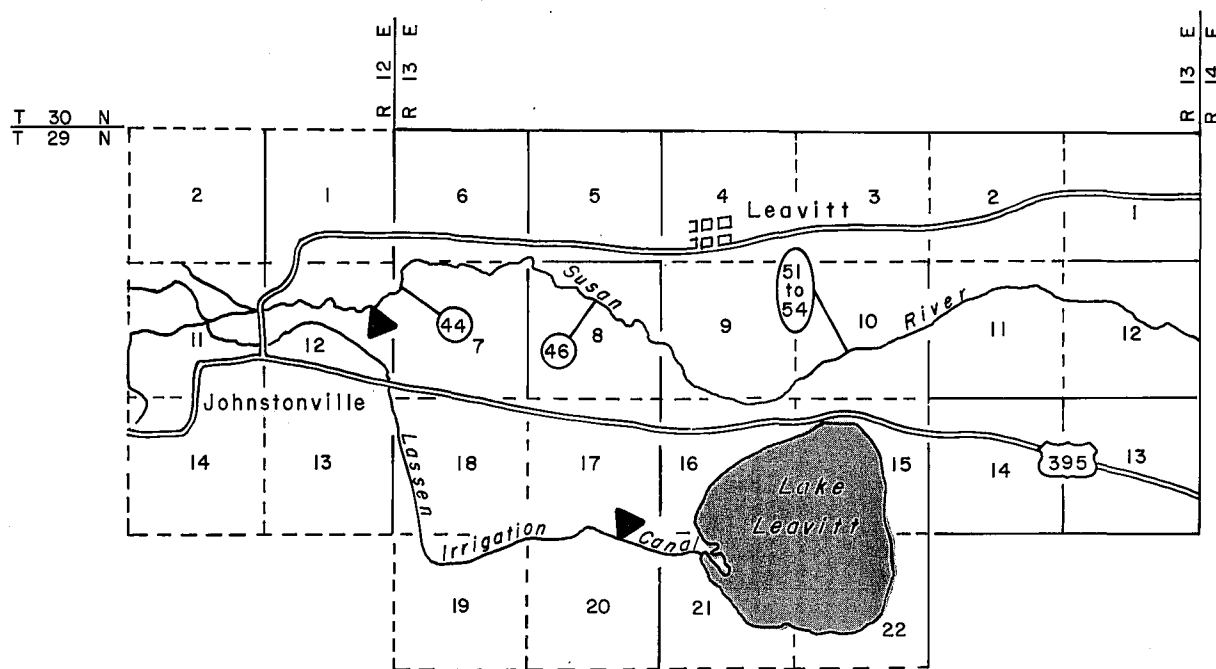


DIVERSIONS FROM PIUTE CREEK, SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 107
DIVERSIONS FROM SUSAN RIVER

<u>Diversion Number</u>	<u>Name</u>	<u>cfs</u>
44	Farris-McAllister Dam	7.47
46	Roberts Dam	4.98
51-54	Roberts-Chappius Dam	12.00

Figure 15f



▲ Watermaster - installed recorder station.



DIVERSIONS FROM SUSAN RIVER, SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 108

1984 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	95	194	163	89	115	134	10
2	110	185	192	81	131	132	9.6
3	109	195	208	76	129	130	7.2
4	104	215	207	121	127	128	8.1
5	99	212	197	116	124	125	7.8
6	99	180	186	143	123	123	7.6
7	105	174	175	161	123	119	6.4
8	119	240	174	138	120	116	6.1
9	132	226	181	130	120	113	5.8
10	140	247	184	125	119	110	5.7
11	148	236	202	117	127	107	6.4
12	148	224	213	115	127	103	6.7
13	514	214	227	113	127	98	9.6
14	566	202	240	107	129	94	9.2
15	421	225	241	104	92	80	9.3
16	327	249	219	102	32	37	8.3
17	298	275	200	98	23	22	6.5
18	267	312	181	95	19	17	6.9
19	254	318	170	90	21	15	11
20	254	289	155	81	16	12	10
21	267	254	149	122	16	11	12
22	235	227	146	130	15	8.8	11
23	225	231	145	126	116	9.0	12
24	224	221	141	139	149	8.5	13
25	217	209	136	135	146	9.4	12
26	235	179	131	130	143	8.8	10
27	227	169	123	125	141	7.6	11
28	209	157	114	123	139	7.1	12
29	199	151	109	118	137	7.0	12
30	197	149	104	115	136	9.7	13
31	200		97		138	14	
MEAN	218	219	171	116	104	61.8	9.2
AC-FT	13380	13010	10530	6870	6390	3800	548

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 109

1984 Daily Mean Discharge
(In cubic feet per second)

GOLD RUN CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			11	8.0	6.0	3.0	3.0
2			11	8.0	6.0	3.0	3.0
3			12	8.0	6.0	3.0	3.0
4		14	14	8.0	6.0	3.0	3.0
5		14	14	12	5.0	3.0	3.0
6		14	14	12	5.0	3.0	3.0
7		14	14	12	5.0	3.0	3.0
8		14	14	12	5.0	3.0	3.0
9		14	15	15	5.0	3.0	3.0
10		14	15	15	4.0	3.0	3.0
11		14	18	15	4.0	3.0	3.0
12		14	22	15	4.0	3.0	3.0
13		14	21	15	3.0	3.0	3.0
14		14	21	15	3.0	3.0	3.0
15		14	18	15	3.0	3.0	3.0
16		14	17	15	3.0	3.0	3.0
17		14	15	15	3.0	3.0	3.0
18		13	13	12	3.0	3.0	3.0
19		12	14	12	3.0	3.0	
20		11	15	12	3.0	3.0	
21		12	13	12	3.0	3.0	
22		11	12	10	3.0	3.0	
23		12	12	9.0	3.0	3.0	
24		12	11	9.0	3.0	3.0	
25		11	11	8.0	3.0	3.0	
26		11	10	8.0	3.0	3.0	
27		11	10	8.0	3.0	3.0	
28		11	9.0	7.0	3.0	3.0	
29		11	8.0	7.0	3.0	3.0	
30		11	8.0	7.0	3.0	3.0	
31			8.0		3.0	3.0	
MEAN		13	14	11	3.8	3.0	3.0
AC-FT		684	833	666	234	184	107

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 110

1984 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER JOHNSTONVILLE BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
MEAN							
AC-FT							

NO RECORD FOR 1984

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 111

1984 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	66	52	16	11	22	9.1	20
2	66	51	14	11	27	10	22
3	64	50	12	10	26	13	20
4	62	49	12	11	26	14	21
5	59	48	12	11	25	12	22
6	58	47	13	10	25	11	21
7	58	46	15	10	24	10	22
8	57	49	17	11	22	8.2	23
9	56	50	18	11	14	8.3	24
10	55	52	17	12	12	8.3	25
11	54	51	19	13	11	8.3	24
12	53	50	20	12	11	8.2	22
13	57	48	20	12	12	8.4	20
14	66	47	19	12	14	9.3	15
15	71	45	17	12	15	9.1	18
16	70	44	16	12	23	8.8	15
17	74	44	17	13	37	8.8	16
18	73	43	17	13	35	8.9	13
19	70	44	16	12	33	8.6	12
20	68	43	15	11	31	8.4	17
21	65	43	13	11	30	8.4	26
22	62	42	14	10	29	8.3	28
23	61	37	14	10	29	8.2	28
24	59	21	14	10	28	8.3	27
25	57	19	14	10	26	8.1	27
26	58	19	12	10	25	8.3	28
27	54	20	12	10	23	8.4	30
28	54	18	12	14	21	8.4	30
29	52	17	12	16	18	8.4	29
30	51	16	11	17	13	8.9	26
31	52		11		9.8	11	
MEAN	60.7	40.2	14.9	11.6	22.5	9.2	22.4
AC-FT	3730	2390	914	690	1380	566	1330

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 112

1984 Daily Mean Discharge
(In cubic feet per second)

OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

Day	McCoy Flat Reservoir Inflow River Susan River			McCoy Flat Reservoir Release to Susan River					Hog Flat Reservoir Releases to Susan River	
	APR	MAY	JUN	APR	MAY	JUN	JUL	AUG	JUN	JUL
1		55	50		58	NR	105	105		5.0
2		54	41		70	NR	105	105		3.0
3		59	35		73	NR	105	105		2.0
4		61	33		73	NR	105	105	46	1.0
5		55	33		76	NR	105	103	46	1.0
6		52	43		73	NR	105	98	49	0
7		51	61		69	NR	105	95	60	
8		62	47		68	NR	105	94	58	
9		64	37		66	NR	105	90	56	
10		71	31		58	NR	105	82	55	
11		76	28	98	64	NR	105	80	58	
12		76	25	90	70	NR	105	80	58	
13		76	22	70	70	NR	105	72	58	
14		76	19	72	59	24	105	72	58	
15		72	15	82	68	20	105	26	58	
16		67	10	94	68	15	98	8.0	58	
17		64	7.0	130	60	10	14	2.0	49	
18		61	3.0	148	52	2.0	2.0	2.0	52	
19		67	1.0	148	44	0	2.0	0	43	
20		73	0	134	NR	58	0.5		39	
21		70		106	NR	60	0.5		36	
22		70		94	NR	82	36		31	
23		70		90	NR	86	114		26	
24		67		82	NR	80	114		22	
25	48	66		62	NR	85	114		22	
26	41	60		52	NR	105	114		19	
27	38	59		52	NR	105	114		17	
28	41	58		52	NR	105	114		16	
29	43	58		50	NR	105	114		11	
30	48	58		52	NR	105	110		10	
31		51			36		107		9.0	
MEAN	43.2	63.8	27.0	87.9	63.8	59.5	88.5	69.7	40.0	2.0
AC-FT	514	3926	1073	3487	2529	2125	5441	2627	2222	24

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 113

1984 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			131	9	72		
2			140	9	84		
3			140	7	79		
4			140	6	86		
5			137	30	87		
6			134	25	88		
7		32	132	22	84		
8		38	114	48	85		
9		37	112	49	84		
10		43	117	58	85		
11		41	90	52	88		
12		32	79	52	90		
13		22	61	58	86		
14		19	54	57	88		
15		14	46	46	84		
16		12	32	44	43		
17		11	68	37	7.0		
18		10	58	37	5.0		
19		14	45	22	5.0		
20		40	37	18	3.0		
21		32	37	14	1.0		
22		13	51	55	1.0		
23		16	48	82	0		
24		32	46	61			
25		70	40	72			
26		61	40	69			
27		65	36	82			
28		70	35	88			
29		84	29	68			
30		90	16	72			
31			14				
MEAN		37.4	72.9	45.0	60.7		
AC-FT		1781	4481	2676	2648		

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 114

1984 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT CHAPPIUS LANE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1					10	4.0	6.0
2					10	4.0	6.0
3					10	4.0	6.0
4					10	4.0	6.0
5					9.0	4.0	7.0
6					9.0	4.0	7.0
7					9.0	4.0	7.0
8					8.0	4.0	7.0
9				50	8.0	4.0	7.0
10				50	8.0	4.0	7.0
11				50	8.0	4.0	7.0
12				50	8.0	4.0	7.0
13				47	7.0	4.0	7.0
14				52	5.0	4.0	7.0
15				47	5.0	4.0	7.0
16				47	5.0	4.0	7.0
17				47	5.0	4.0	7.0
18				45	5.0	4.0	8.0
19				55	5.0	4.0	8.0
20				50	5.0	4.0	8.0
21				70E	5.0	3.0	8.0
22				80E	5.0	3.0	8.0
23				75E	5.0	3.0	8.0
24				22	5.0	4.0	8.0
25				18	5.0	4.0	8.0
26				18	5.0	5.0	9.0
27				18	5.0	5.0	9.0
28				16	5.0	6.0	9.0
29				14	5.0	6.0	9.0
30				12	5.0	6.0	9.0
31					5.0	6.0	
MEAN				42	6.6	4.2	7.5
AC-FT				1751	405	260	444